



SSDI

NEW & FEATURED PRODUCTS 2024



*HIGH DENSITY, HIGH PERFORMANCE, & HIGH RELIABILITY PRODUCTS
FOR NEW & LEGACY AEROSPACE / DEFENSE APPLICATIONS*

JANS CERTIFIED | ISO 9001 & AS9100 CERTIFIED

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*TX, TXV, and S-level screening available for all devices. Screening based on MIL-PRF-19500.
Screening flows available on request.

SSDI is JANS certified and ISO 9001 / AS9100 certified

SSDI has been a pioneer in semiconductor manufacturing for over 50 years and has earned a reputation for setting the highest standards of reliability and performance. SSDI's products meet the critical needs of many Aerospace and Defense applications.



ISO 9001 & AS9100 Certified



JANS Certified



For additional information and data sheets:
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Warnings

Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact SSDI.

SSDI components may be used in life-support devices or systems only with the express written approval of SSDI. Failure of such components can be reasonably expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life support devices or systems are intentionally implanted in a human body, or used to support and/or maintain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.

SSDI Delivers HiRel Product Innovation & Solutions for New / Legacy Designs



3H FOCUS

- 50+ years serving the HiRel market
- JANS certified
- ISO 9001 / AS9100 certified
- Developing new, innovative products with performance not matched by other manufacturers' products
- Exploring new technology (e.g. GaN, SiC, etc.)

+



DESIGN & PACKAGING FLEXIBILITY

- Target specific electrical characteristics to satisfy customer requirements
- Wide range of packaging options from surface mount to legacy packages
- Improve density of board design which leads to overall system cost improvements

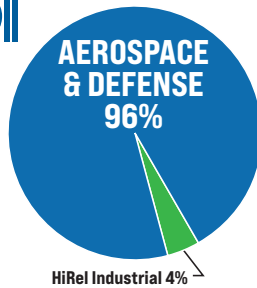
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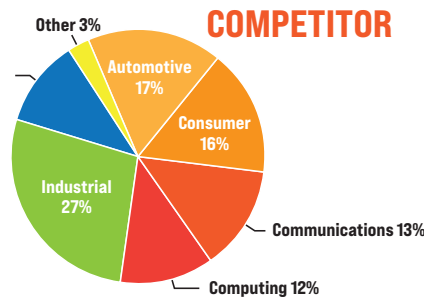
SOLUTIONS

- Broad capabilities: catalog showcases capability, not limited to current offerings
- Offer replacements for most products from competitors (e.g. Microsemi, Infineon / IR, TI, Siliconix, etc.)
- Sustainment: support for the life of programs; work with customer to accommodate small to medium quantities

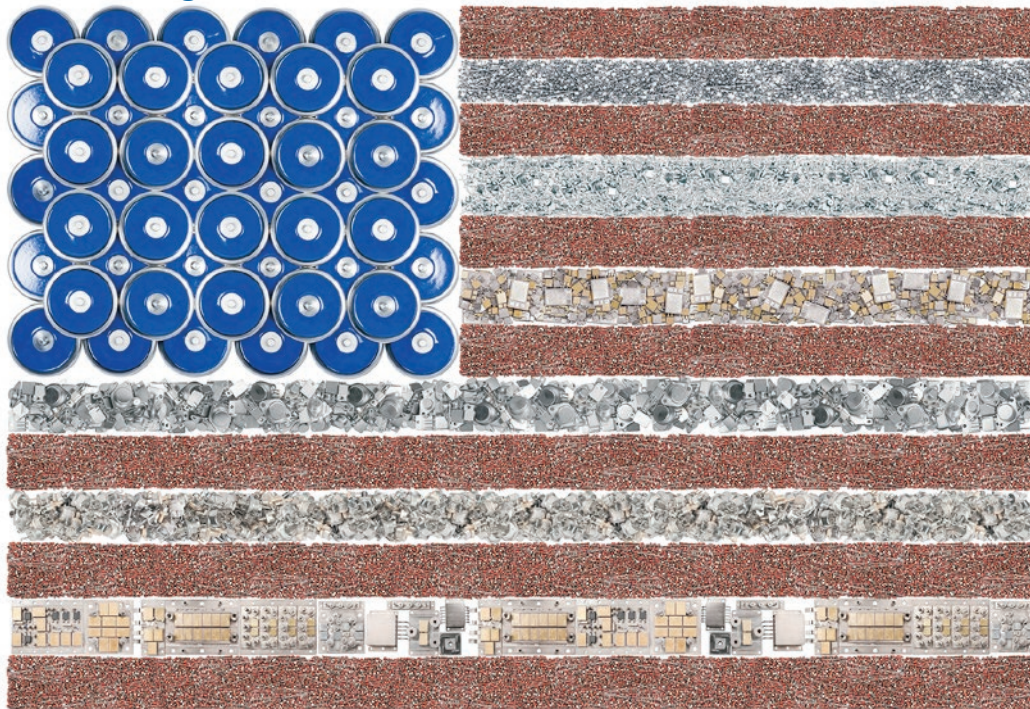
Sales by Sector



AEROSPACE & DEFENSE 11%



Wide Range of Hermetic Products - Made in the USA



SILICON

- Rectifiers
- Schottkys
- Zeners
- TVS
- MOSFETs
- Bipolar Transistors
- JFETs
- PIN Diodes
- Thyristors
- IGBTs

SILICON CARBIDE (SiC)

- Schottkys
- MOSFETs

GALLIUM NITRIDE (GaN)

- Power FETs

ASSEMBLY PRODUCTS

- LDO
- DC-DC Converters
- Hybrids
- Assemblies
- Power Modules

Notes: Minimum order may apply.
Most products available in die form.

RECTIFIERS

t_{RR} : Hyperfast (≤ 40 ns) to Standard (> 500 ns - 25 μ s)
 V_R : 16 V - 15 kV | I_O : 25 mA - 800 A

Advantages of SSDI Rectifiers / How Parts Met Customer Needs:

- 1/ High performance: high power / voltage / efficiency, etc.
- 2/ Cross references available for most competitors' products
 - Able to replace just about all 2 terminal devices
 - Often delivering enhanced performance
- 3/ Design flexibility
 - Targeted key electrical characteristics for customer requirement
- 4/ High density packaging / packaging flexibility
 - Used packaging capabilities to meet customer requirement
- 5/ Obsolescence / sustainment support
 - Developed to replace obsolete / out-of-stock part
 - Support high power legacy packages (Stud mount, TO-can, etc.)

SDR6642UB^{1/2/4/5/}

300 mA, 100 V, 3.5 ns typ Hyperfast Recovery Center Tap & Single Diodes

- Low C_j : 1.3 pF typ
- Enhanced replacement for 1N6642UB, 1N6642UBCC, 1N6642UBCA, 1N6642UBD



SRH20UF - SRH30UF^{1/2/4/}

1.5 A, 2 - 3 kV, 90 ns Ultrafast Recovery High Voltage Rectifiers

- Smaller-sized replacements for 1N6512 - 1N6515 & 1N6520 - 1N6523
- Designed in for space and defense applications



SER100LE30 - SER100LE60^{1/4/}

100 A, 300 - 600 V Ultrafast Soft Recovery Rectifiers

- Low I_R : 2 μ A typ; low t_{RR} : 50 ns
- Designed in for spacecraft application



SDR06150S.22 - SDR06200S.22^{1/4/}

6 A, 150 - 200 V, 30 ns Hyperfast Rectifiers Enhanced 1N5811 equivalent

- Low I_R : 10 μ A typ; low V_F : 0.91 V typ
- Designed in for satellite and defense applications



SDR04500S.22 - SDR04600S.22^{1/4/}

4 A, 500 - 600 V, 30 ns Hyperfast Rectifiers Enhanced Equivalent for 1N6627 / 1N6628

- Low I_R : 0.02 μ A typ; low t_{RR} : 18 ns typ
- Designed in for space applications



SDR620CTM/Z - SDR622CTM/Z^{1/2/}

40 A, 100 - 200 V, 35 ns Hyperfast Recovery Center Tap Rectifiers

- Replacement for 1N6659
- Low I_R : 0.02 μ A typ; low t_{RR} : 22 ns typ
- Designed in for space and defense applications



SDR12U080 - SDR12U120^{1/2/4/}

12 A, 800 - 1200 V, 50 ns Ultrafast Rectifiers

- High I_{FSM} : 120 A; low I_R : 1 μ A typ
- Designed in for power systems / spacecraft propulsion



QPL PRODUCTS

SSDI Fabricated Diodes (Non-Cavity Devices)
 Two JANS Certified Facilities in La Mirada, CA (USA)

Advantages of SSDI QPL Products / How Parts Met Customer Needs:

- 1/ High performance: high power / voltage / efficiency, etc.
- 2/ Rugged construction
 - Void free hermetically sealed ceramic frit glass construction (no PIND requirement)
 - High temperature Category I eutectic metallurgical bond
 - Excellent cryogenic performance in liquid-to-liquid shock tests
 - Weldable solid silver leads (provides stress relief; facilitates welding; allows for higher firing temperature resulting in more rugged construction)

1N8265^{1/2/}

12 A, 180 V, 40 ns Hyperfast Rectifiers High Current Replacement for 1N5811

- Double the output current of 1N5811
- Plan to submit for QPL qualification



QPL Certified 1N8255 - 1N8257^{1/2/}

4 - 6 A, 100 - 200 V Hyperfast Rectifiers

Miniature 1N5811 / Enhanced 1N5806 Replacement

- JANS: MIL-PRF-19500/774 (Axial / US)
- Low V_F : 0.865 V (3 A, 1N8256)
- Low I_R : 2 μ A; low t_{RR} : 30 ns
- Designed in for multiple space and defense applications



QPL Certified 1N7066 - 1N7068^{1/2/}

10 A, 100 - 200 V, 30 ns Hyperfast Soft Recovery Rectifiers

- JANS, JANTXV, JANTX & JAN: MIL-PRF-19500/768 (Axial / US)
- Designed in for multiple space and defense applications



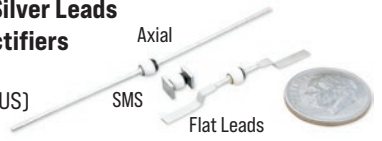
Max Ratings	1N5811	1N7068	Improvement
I_O	6.0 A	10.0 A	67%
I_{FSM}	125 A	250 A	100%
V_{RRM}, V_{RWM}, V_R	150 V	200 V	33%
I_R @ 125°C	525 μ A	100 μ A	80%
$R_{\theta JL}$	22°C/W	8°C/W	64%
$R_{\theta JEC}$	6.5°C/W	4.5°C/W	31%

QPL Certified 1N5807 - 1N5811^{1/2/}

Only JANS1N5811 with Solid Silver Leads

6 A, 50 - 150 V Hyperfast Rectifiers

- JANS, JANTXV, JANTX & JAN: MIL-PRF-19500/477 (Axial / US)
- Low V_F : 0.925 V; low t_{RR} : 30 ns



QPL Certified 1N6512 - 1N6519^{1/2/}

Only JANS High Voltage Rectifiers

0.5 - 1.5 A, 1.5 - 10 kV Ultrafast Rectifiers

- JANS: MIL-PRF-19500/575 (Axial)
- Low I_R : 1 μ A; low t_{RR} : 70 ns
- Designed in for multiple space and defense applications



= Designed in for defense application



= Designed in for space application

SCHOTTKYS

 V_R : 15 V - 300 V | I_0 : 500 mA - 600 A

Advantages of SSDI Schottkys / How Parts Met Customer Needs:

- 1/ Highest voltage available for hermetic Si Schottkys: 300 V
- 2/ High performance: high power / efficiency, low leakage, etc.
- 3/ Cross references available for most competitors' products
 - Able to replace just about all 2 terminal devices
 - Often delivering enhanced performance
- 4/ Design flexibility
 - Targeted key electrical characteristics for customer requirement
- 5/ High density packaging / packaging flexibility
 - Used packaging capabilities to meet customer requirement
- 6/ Obsolescence / sustainment support
 - Developed to replace obsolete / out-of-stock part

SED20HE250 - SED20HE300 ^{1/2/4/5/} HB HE/HF

20 A, 250 - 300 V High Voltage Schottkys

- Low V_F : 0.85 V typ; low I_R : 5 μ A typ
- Designed in for space application

Sedpack 1 / Low profile: 0.095" max

Sedpacks / Schottkys ^{2/5/}

- 25+ years of military / space flight history
- High density packaging (nearly chip scale)
- Direct bond connection for high current carrying capabilities
- Available in centertap configurations

Package	Part Number	I_0 (A)	V_R (V)	$I_{R typ}$ (μ A)
Sedpack 1	SED10HE200	10	200	0.7
	SED20HE25	20	25	20
	SED20HE100	20	100	0.2
	SED20HE300 ^{1/}	20	300	5
	SED45HE35	45	35	25
Sedpack 2	SED40KE200	40	200	0.2
	SED75KE45	75	45	300
Sedpack 3	SED100LE200	100	200	3
	SED100LE300 ^{1/}	100	300	0.01
	SED120LE100	120	100	5000 (max)
	SED150LE100LL	150	100	70

SSR08150S.22 - SSR08200S.22 ^{2/5/} SMD.22

8 A, 150 - 200 V Schottkys

- Low I_R : 0.3 μ A typ
- Designed in for space application

SSR05250S.22 - SSR05300S.22 ^{1/2/5/} SMD.22

5 A, 250 - 300 V Center Tap Schottkys

- Low V_F : 0.93 V typ; low I_R : 0.1 μ A typ
- Designed in for space applications

SSR2045-18 ^{2/3/4/5/6/} LCC-18

20 A, 45 V Schottkys

- Low V_F : 0.635 V typ; Low I_R : 5 μ A typ
- Designed in for defense applications
- Replacement for IR 8EQ045

 = Designed in for defense application

 = Designed in for space application

SiC SCHOTTKYS

 V_R : 300 V - 2 kV | I_0 : 1 A - 100 A

Advantages of SSDI SiC Schottkys / How Parts Met Customer Needs:

- 1/ High performance
 - High voltage capabilities up to 2 kV - allows for higher derating to mitigate radiation effects
 - High power - can easily be paralleled for higher currents (matching not necessary with SiC products due to positive temperature coefficient and negligible t_{RR})
 - Excellent performance at high temperatures
- 2/ Cross references available for most competitors' products
 - Able to replace just about all 2 terminal devices
 - Often delivering enhanced performance
- 3/ Design flexibility
 - Targeted key electrical characteristics for customer requirement
- 4/ High density packaging / packaging flexibility
 - Used packaging capabilities to meet customer requirement

SSR05C50 - SSR05C60 ^{1/2/3/4/}

5 A, 500 - 600 V SiC Schottkys

- Low I_R : 0.1 μ A typ
- Designed in for space and defense applications
- Hermetic high current / voltage replacement for plastic device

Cerpack SMD.22 SMD.5

SSR20C180 ^{1/3/4/}

20 A, 1800 V SiC Schottkys

- Low I_R : 20 μ A typ

Cerpack SMD.5

SSR40C100S1 - SSR40C120S1 ^{1/3/4/}

40 A, 1000 - 1200 V SiC Schottkys

- Low V_F : 1.45 V typ
- Low I_R : 30 μ A typ

SMD1

High Density SMD.22 Products

S.22: Small Footprint / Low Profile: 0.157" x 0.227" x 0.075" max
 S.22T: Replaces Surface Mount Square Tab (SMS / US) Packages

Type	Part / Series	Voltage (V)	Current (A)	Power (W)
Rectifier	SDR06200	150 - 200	6	-
	SDR0360	400 - 600	3	-
	SDR04600	500 - 600	4	-
Schottky	SSR10030	20 - 30	10	-
	SSR5822	40	3	-
	SSR08045	45	8	-
	SSR04200	150 - 200	4	-
	SSR08300	250 - 300	8	-
	SSR12C60	500 - 600	12	-
SiC Schottky	SSR12C60	500 - 600	12	-
MOSFET	SFF110	100	3.5	16.5
Zener	SZH6A10	4.3 - 10	-	12
TVS	ST400A75	20 - 75	-	400
PNP Transistor	SFT4407	60	2	5.5

ZENERS

ZENERS - P_D : 250 mW - 200 W | V_Z : 2.4 V - 510 V

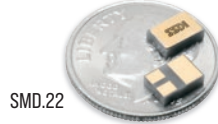
Advantages of SSDI Zeners / How Parts Met Customer Needs:

- 1/ **Wide range of voltage options**
 - Large inventory of starting material for different voltages
 - Die stacking enables high voltage capability
- 2/ **Cross references available for most competitors' products**
 - Able to replace just about all 2 terminal devices
 - Often delivering enhanced performance
- 3/ **High performance: high power, high voltage, low leakage, etc.**
- 4/ **Design flexibility (i.e. target specific V_Z , P_D , etc.)**
 - Targeted key electrical characteristics for customer requirement
- 5/ **High density packaging / packaging flexibility**
 - Used packaging capabilities to meet customer requirement
 - Offer surface mount package options
- 6/ **Obsolescence / sustainment support**
 - Developed to replace obsolete / out-of-stock part
 - Support high power legacy packages (Stud mount, TO-can, etc.)

SZH6A4.3 - SZ6B10^{1/3/5/}

12 W, 4.3 - 10 V LVA Zener Diodes

- Low Zener impedance
- Low I_R : as low as 0.1 μ A
- Additional voltage options available



SZN3350 / SZN4556 Series^{1/2/3/6/} SZN2846 / SZN4564 Series^{1/2/3/6/}

50 W, 3.9 - 200 V Zener Diodes
Replacement for 1N3305 - 1N3350,
1N4549 - 1N4556, 1N2804 - 1N2846 &
1N4557 - 1N4564

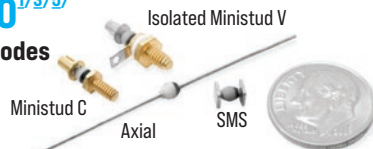
- Low $R_{\theta JC}$: 2 °C/W
- Designed in for defense applications



SZ6A7.5 - SZ6B270^{1/3/5/}

6 - 10 W, 7.5 - 270 V Zener Diodes

- Replace 10 W Zeners in DO-4 with smaller ministud or surface mount packages
- Designed in for defense applications



SZN5063 - SZN5117^{1/2/3/5/6/}

3 W, 6.8 - 400 V Zener Diodes
Replacement for 1N5063 - 1N5117

- Designed in for defense applications



SZ3FA7.5 - SZ3GB510^{1/3/5/}

3 - 4 W, 7.5 - 510 V Zener Diodes

- Designed in for space and defense applications



SZN6309 - SZN6355 Series^{1/2/3/5/6/}

0.5 W, 2.4 - 200 V Zener Diodes
Replacement for 1N6309 - 1N6333

- Designed in for space and defense applications



TVS

TVS - P_{PP} : 150 W - 60 kW | V_{RWM} : 6.7 V - 510 V

Advantages of SSDI TVS / How Parts Met Customer Needs:

- 1/ **Wide range of voltage options**
 - Large inventory of starting material for different voltages
 - Die stacking provides flexibility to achieve different voltages
- 2/ **Cross references available for most competitors' products**
 - Able to replace just about all 2 terminal devices
 - Often delivering enhanced performance
- 3/ **High performance: high power, low leakage, etc.**
- 4/ **Design flexibility (i.e. target specific P_{PP} , V_{CL} , etc.)**
 - Targeted key electrical characteristics for customer requirement
 - Customize clamping slope
- 5/ **High density packaging / packaging flexibility**
 - Used packaging capabilities to meet customer requirement
 - Offer surface mount package options
- 6/ **Obsolescence / sustainment support**
 - Developed to replace obsolete / out-of-stock part
 - Support high power legacy packages (Stud mount, TO-can, etc.)

ST400A20S.22 - ST400B75S.22^{1/5/}

400 W, 20 - 75 V Unidirectional TVS

- Bidirectional version available
- Additional voltage options available
- Designed in for space application



ST2.5KA400^{3/5/}

2.5 kW, 400 V Bidirectional TVS

- High peak pulse power dissipation
- Low leakage



ST10K18BT - ST10K100BT^{1/3/4/5/}

10 kW, 18 - 100 V Unidirectional TVS

- Direct bond connection for more efficient power dissipation (no wire bonds)
- Additional voltages available including higher voltages up to 400 V
- Designed in for space applications



ST10KS12MB - ST10KS110MB^{1/3/} ST15KS12MB - ST15KS110MB^{1/3/}

10 - 15 kW, 12 - 110 V Unidirectional TVS

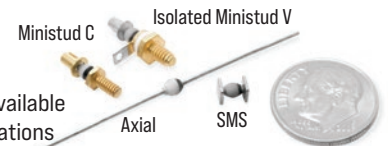
- High peak pulse power dissipation
- High surge rating



ST1000 Series^{1/5/}

1000 W, 7.5 - 510 V TVS

- Additional voltage options available
- Designed in for space applications



STN6469 - STN6476^{1/2/3/}

1500 W, 5.6 - 54 V Unidirectional TVS

- Bidirectional version available
- Designed in for defense applications



= Designed in for defense application



= Designed in for space application

RAD TOLERANT P-FETS MOSFETS, JFETS & IGBTs

P_D : 100 mW - 300 W | I_D : 10 mA - 400 A | BV : -200 V - 2.2 kV

Advantages of SSDI FETS & IGBTs / How Parts Met Customer Needs:

- 1/ High performance: high power / voltage, fast switching, etc.**
- 2/ Cross references available for most competitors' products**
 - Often delivering enhanced performance
- 3/ Rad tolerant P-channel MOSFETs**
- 4/ Design flexibility**
 - Targeted key electrical characteristics for customer requirement
- 5/ High density packaging / packaging flexibility**
 - Used packaging capabilities to meet customer requirement
 - Offer surface mount package options
- 6/ Obsolescence / sustainment support**
 - Developed to replace obsolete / out-of-stock part
 - Support high power legacy packages (Stud mount, TO-can, etc.)

SFF12P10S.22^{1/3/5/}

-12 A, -100 V, 145 mΩ typ Rad Tolerant,
Fast Switching P-Channel MOSFET

- Small footprint, ceramic package



SFF25P10S.3^{1/3/5/}

-25 A, -100 V, 62 mΩ typ Rad Tolerant, Fast Switching
P-Channel MOSFET

- Small footprint, ceramic package



SFL11P06S.22^{1/3/5/}

-11 A, -60 V, 70 mΩ typ Rad Tolerant,
Fast Switching, Logic Level P-Channel MOSFET

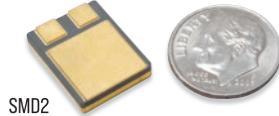
- Designed in for space applications
- Good performance to SEE testing (LET = 60 MeV)



SFF65P20S2^{1/3/4/}

-65 A, -200 V, 85 mΩ typ
P-Channel MOSFET

- Fast switching
- Low total gate charge: 85 nC



Examples of New, Rad Tolerant P-Channel MOSFETs

Family	Part Number	I_D (A)	$R_{DS(ON)}$ (mΩ)	Package	Notes
-60 V	SFL11P06	-11	70 typ	SMD.22	Logic Level, Small Footprint
	SFL22P06	-22	78 typ	SMD.5	Logic Level, Replaces 2N7624
	SFL40P06	-40	30 typ	SMD.5	Logic Level
-100 V	SFF12P10	-12	145 typ	SMD.22	Small Footprint
	SFF9140	-23	135 typ	SMD.5, Cerpac	Replaces IRF9140 Types
	SFF25P10	-25	62 typ	SMD.3	Small Footprint
	SFF9150	-45	46 typ	SMD1	Replaces IRF9150 Types
	SFF75P10	-75	32.5 typ	SMD2	Replaces IRF9160 Types
-200V	SFF57P20	-57	35 typ	TO-258/9	Avalanche Rated TrenchFET
	SFF65P20	-65	85 typ	SMD2	Avalanche Rated

Note: TO-25X package options available

SFH06055-20^{1/4/5/}

20 A, 60 V, 51 mΩ typ High Side Power Switch

- Zener protected, low $R_{DS(on)}$ MOSFET (SFF11P06) with small signal, fast switching NPN transistor driver
- Logic level input voltage
- Resistors can be added internally
- Developed to simplify customer's space design



SiC MOSFETS

I_D : up to 200 A | V_{DSS} : up to 1.7 kV | $R_{DS(ON)}$: 7 mΩ - 96 mΩ

Advantages of SSDI SiC MOSFETS / How Parts Met Customer Needs:

- 1/ High performance: high power / voltage, fast switching, etc.**
 - Faster switching than silicon MOSFETs
 - Highest voltage capability compared to silicon and GaN FETs - offers higher derating to mitigate radiation effects
- 2/ Drop-in replacements for silicon MOSFETs**
 - Improve performance with higher voltage and faster switching
- 3/ Rad tolerant**
- 4/ Design flexibility**
 - Targeted key electrical characteristics for customer requirement
- 5/ High density packaging / packaging flexibility**
 - Used packaging capabilities to meet customer requirement
 - Offer surface mount package options

SFC85N80S2^{1/2/3/}

85 A, 800 V SiC MOSFET

- Low $R_{DS(ON)}$: 8.7 mΩ typ
- Low Q_g : 270 nC typ



SFC57N170^{1/2/3/}

57 A, 1700 V SiC MOSFETs
Enhanced Replacement for 1 kV+ silicon MOSFETs

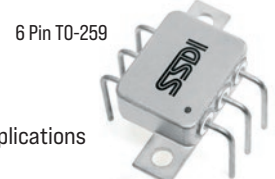
- Low $R_{DS(ON)}$: 45 mΩ typ
- Low Q_g : 188 nC typ
- Low C_{RSS} : 6.7 pF typ



SFC200N90^{1/3/4/}

200 A, 900 V SiC MOSFET

- Low $R_{DS(ON)}$: 7 mΩ typ
- Low C_{RSS} : 25 pF typ
- Designed in for space / motor control applications
- Used to replace multiple silicon MOSFETs



SiC MOSFETs Product Line

Part Number	V_{DSS} (V)	I_D (A)	$R_{DS(ON)}$ (mΩ)	Package
SFC85N80	800	85	8.7 typ	SMD2
SFC85N90	900	85	10 typ	SMD1, SMD1L, SMD2
SFC200N90	900	200	7 typ	6 Pin TO-259
SFC35N120	1200	26	80 typ	SMD.5, Cerpac
SFC35N120	1200	30	80 typ	TO-257
SFC57N170	1700	57	45 typ	SMD1, SMD1L

Note: TO-25X package options available

GaN FETS

I_D : 6.3 A - 90 A | V_{DSS} : 40 V - 1 kV | $R_{DS(ON)}$: 2.5 mΩ - 190 mΩ

Advantages of SSDI GaN FETS / How Parts Met Customer Needs:

- 1/ High performance: high power / voltage, fast switching, etc.**
 - Faster switching than silicon and SiC MOSFETs
 - Highest voltage capability for hermetic GaN FETs
- 2/ High density packaging / packaging flexibility**

SGF48N10^{1/2/}

48 A, 100 V, 5.5 mΩ typ GaN FET



SGF48N20^{1/2/}

48 A, 200 V, 8 mΩ typ GaN FET



BIPOLAR TRANSISTORS

P_D : 200 mW - 600 W | I_C : 10 mA - 200 A | BV : 10 V - 1 kV

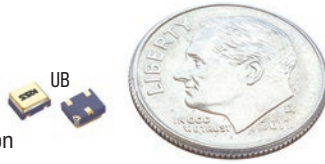
Advantages of SSDI BJTs / How Parts Met Customer Needs:

- 1/ High performance: high power / voltage, low $V_{CE(SAT)}$, etc.
- 2/ Cross references available for most competitors' products
 - Often delivering enhanced performance
- 3/ Design flexibility
 - Targeted key electrical characteristics for customer requirement
- 4/ High density packaging / packaging flexibility
 - Used packaging capabilities to meet customer requirement
 - Offer surface mount package options
- 5/ Obsolescence / sustainment support
 - Developed to replace obsolete / out-of-stock part
 - Support high power legacy packages (Stud mount, TO-can, etc.)

SFT4261UB^{1/2/4/5/}

-30 mA, -15 V PNP Transistors
Replacement for 2N4261UB

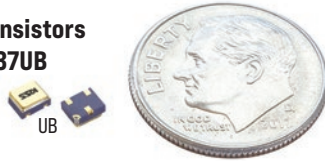
- Low $V_{CE(SAT)}$: -0.15 V
- Designed in for defense application



SFT3637AUB^{1/2/4/5/}

-1 A, -200 V High Voltage PNP Transistors
Enhanced performance to 2N3637UB

- Low $V_{CE(SAT)}$: -0.4 V typ



SFT3700^{1/2/4/5/}

1 A, 80 V High Speed NPN Transistors
Replacement for 2N3019, 2N3057A, & 2N3700 types
Complementary use with SFT4300 Series

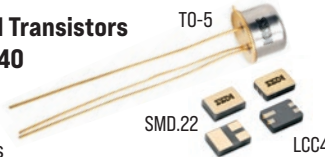
- Low $V_{CE(SAT)}$: 0.1 V typ
- Designed in for space application



SFT5010 - SFT5012^{1/2/3/4/5/}

1 A, 500 - 700 V Rad Tolerant NPN Transistors
Replacement for 2N3439 - 2N3440
& 2N5010 - 2N5012

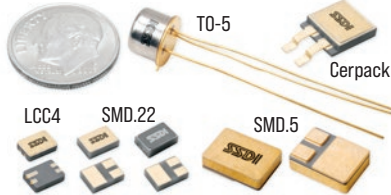
- Low $V_{CE(SAT)}$: 0.1 V
- Designed in for space applications



SFT5096A^{1/2/4/5/}

1 A, 550 V High Voltage
PNP Transistors
Replacement for 2N5096

- Low $V_{CE(SAT)}$: 0.1 V
- Low I_{CBO} : 1 μ A



SFT698S.22^{1/2/4/5/}

1 A, 450 V NPN Transistor - Enhanced replacement for 2N3439U4 & complementary use with SFT5096A

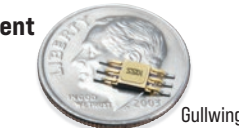
- Low $V_{CE(SAT)}$: 0.075 V typ
- Designed in for defense application



SFT22907GW^{1/2/4/}

600 mA, 60 V Dual Transistor - Replacement for 2N2222AU (NPN) & 2N2907AU (PNP)

- Easy solderability inspection
- Designed in for defense application



BRIDGES / HV ASSEMBLIES

V_R : standard to 20 kV, extended HV range to > 50 kV

I_o : standard to 5 A, extended current range > 50 A

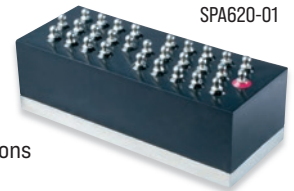
Advantages of SSDI HV Assemblies / How Parts Met Customer Needs:

- 1/ High performance: high power / voltage, low t_{RR} , high I_{FSM} , etc.
- 2/ Cross references available for most competitors' products
 - Often delivering enhanced performance
- 3/ Design flexibility
 - Targeted key electrical characteristics for customer requirement
 - Utilize internal hermetic components to meet high reliability / high voltage customer requirements
- 4/ High density packaging / packaging flexibility
 - Used packaging capabilities to meet customer requirement
- 5/ Obsolescence / sustainment support
 - Developed to replace obsolete / out-of-stock part
 - 40+ years of heritage

SPA620-01^{1/3/}

1 A, 22.5 kV High Voltage
Rectifier Bridge

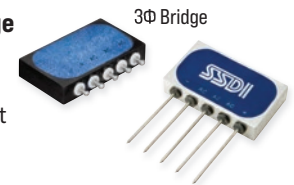
- Ultrafast recovery: 60 ns max
- Designed in for defense / EW applications



SDA669 Series^{1/3/4/5/}

30 A, 600 - 1000 V Three Phase Bridge
Rectifier Assembly

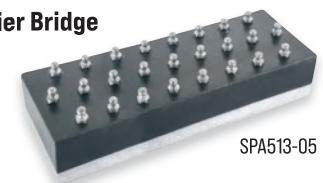
- Low I_R : 5 μ A
- Standard, fast, ultrafast and hyperfast versions available
- Designed in for defense applications



SPA513 Series^{1/3/}

1 A, 15 - 20 kV High Voltage Rectifier Bridge

- Ultrafast recovery: 60 ns max
- Designed in for defense / EW and radar applications



SDA37 Series^{1/3/}

10 A, 100 - 600 V Three Phase Bridge Rectifier

- Available in ultrafast and hyperfast versions
- Designed in for defense / airborne radar applications



SDA167 Series^{1/3/}

25 A, 400 - 800 V Three Phase Bridge Rectifier

- Available in standard, fast, and ultrafast versions
- Designed in for defense applications



= Designed in for defense application



= Designed in for space application

THYRISTORS

SCRS - $I_{GT} < 1\text{ A}$ - 175+ A | $V_{RRM} \leq 1600\text{ V}$
 PUTS - $I_{GT} 0.15\text{ A} - 0.3\text{ A}$ | $V_{RRM} 40 - 100\text{ V}$

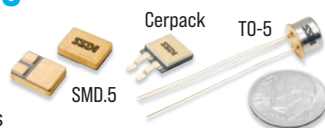
Advantages of SSDI Thyristors / How Parts Met Customer Needs:

- 1/ High performance: high power / voltage, low I_{GT} , etc.
- 2/ Cross references available for most competitors' products
 - Often delivering enhanced performance
- 3/ Design flexibility
 - Targeted key electrical characteristics for customer requirement
 - Faster tQ versions of standard parts available
- 4/ High density packaging / packaging flexibility
 - Used packaging capabilities to meet customer requirement
 - Offer surface mount and T0-25X package options
- 5/ Obsolescence / sustainment support
 - Developed to replace obsolete / out-of-stock part
 - 40+ years of heritage

SFS07050 - SFS07400^{1/2/4/5/}

7 A, 50 - 400 V SCR

- Low I_{HQ} : 1.25 mA typ
- Low I_{GT} : 20 μA typ
- Designed in for space applications



SFS2510 - SFS2540^{1/2/5/}

25 A, 100 - 400 V Fast Switching SCR

- Low I_{HQ} : 70 mA
- Low I_{GT} : 180 mA



SFS3027 - SFS3029^{1/2/3/4/5/}

0.5 A, 30 - 100 V Fast Switching SCR
 Replacement for 2N3027 - 2N3029

- Low I_{HQ} : 5 mA
- Low I_{GT} : 200 μA
- Designed in for defense applications



= Designed in for defense application

= Designed in for space application

SEMICONDUCTOR MARKET OVERVIEW

While SSDI has the capabilities to supply most **standard, generic products** (represented by the orange section below), its sales primarily address the need for **End of Life / DMS Solutions** or **New, Innovative Solutions**, which are not readily available through high volume manufacturers or distribution channels (represented by the 2 blue sections below).



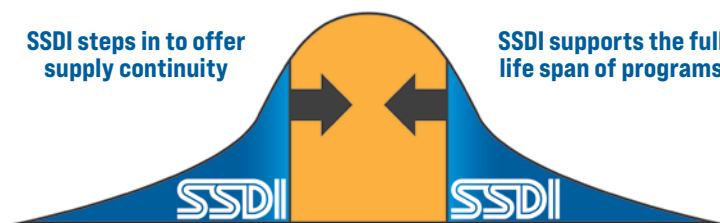
SEMICONDUCTOR MARKET TREND

Due to market changes (i.e. mergers, acquisitions, etc.), there is an increasing trend of planned obsolescence or product discontinuation due to insufficient demand across the entire customer base. As inventory of **standard, generic products** shrinks, SSDI is able to fill these gaps and even fulfill small- to medium-sized orders. SSDI's flexibility also allows it to offer application specific solutions. With this investment in the specific needs of each program, SSDI benefits by supporting the full life span of the program while alleviating potential supply concerns for the customer.

When demand diminishes, competitors often discontinue products

SSDI steps in to offer supply continuity

SSDI supports the full life span of programs



HOW SSDI RESCUES PROGRAMS FROM:

RELIABILITY ISSUES

- Offer up to JANS level / equivalent S level screening
- 2 JANS certified facilities in the USA
- 50+ years supporting aerospace & defense applications
- In-house screening capabilities (additional screening options to match mission specs)

SUPPLY ISSUES

- Offer replacements for most products from competitors (e.g. Microsemi, Infineon / IR, TI, Siliconix, etc.)
- Maintain materials inventory (work with customer to forecast future orders)
- Shorter lead times (TX, TXV, and S level equivalent screening - offering faster delivery than out of stock QPL devices awaiting approval)
- Work with customer to accommodate small orders

PERFORMANCE ISSUES

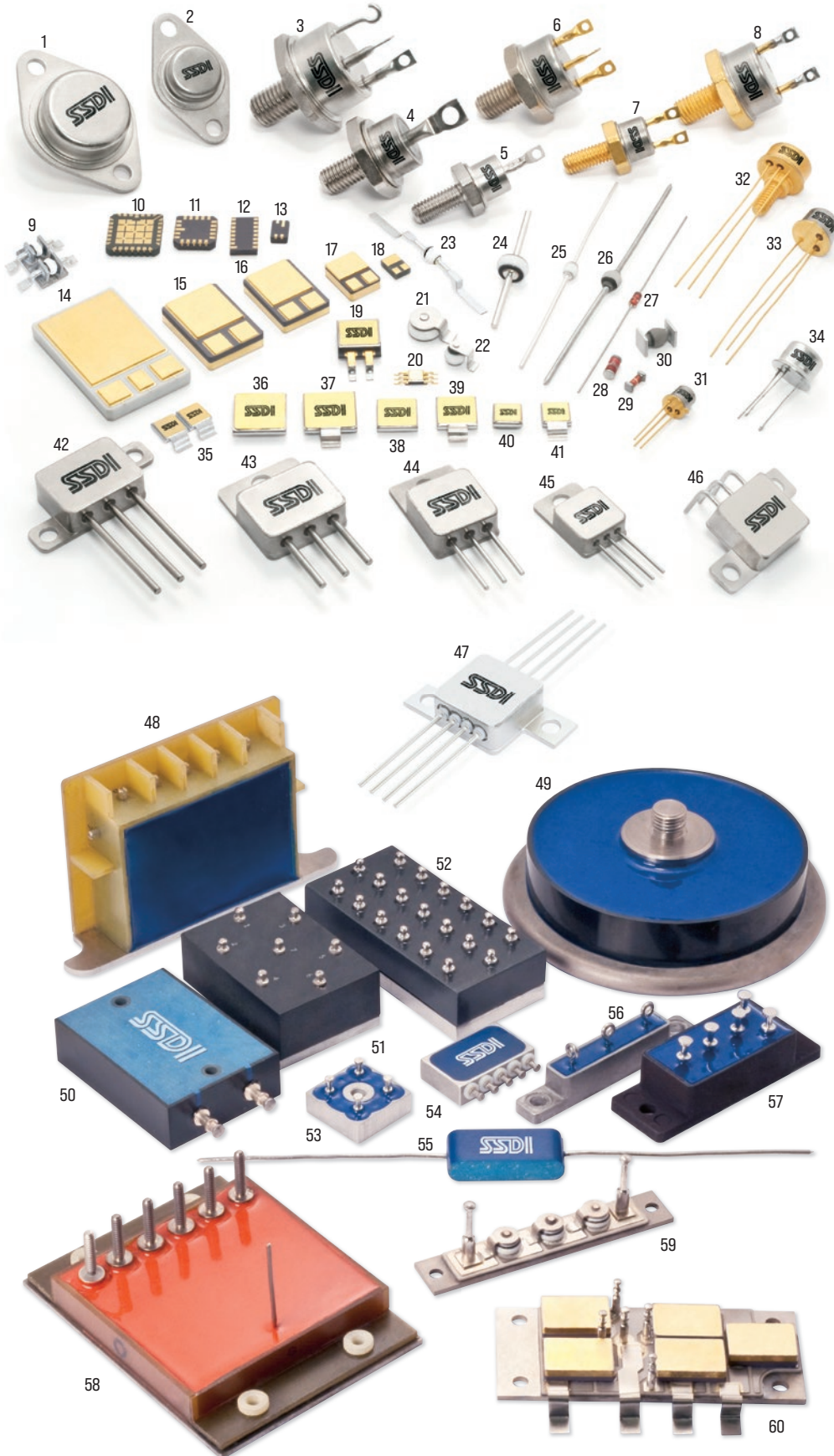
- Design flexibility (target key electrical characteristics to match mission specs)
- Packaging flexibility (improve density of board design which leads to overall system cost improvements)
- Build to data sheets & SCDs
- Product development (offer higher performance than standard, generic products)

Examples of Hermetic Packaging



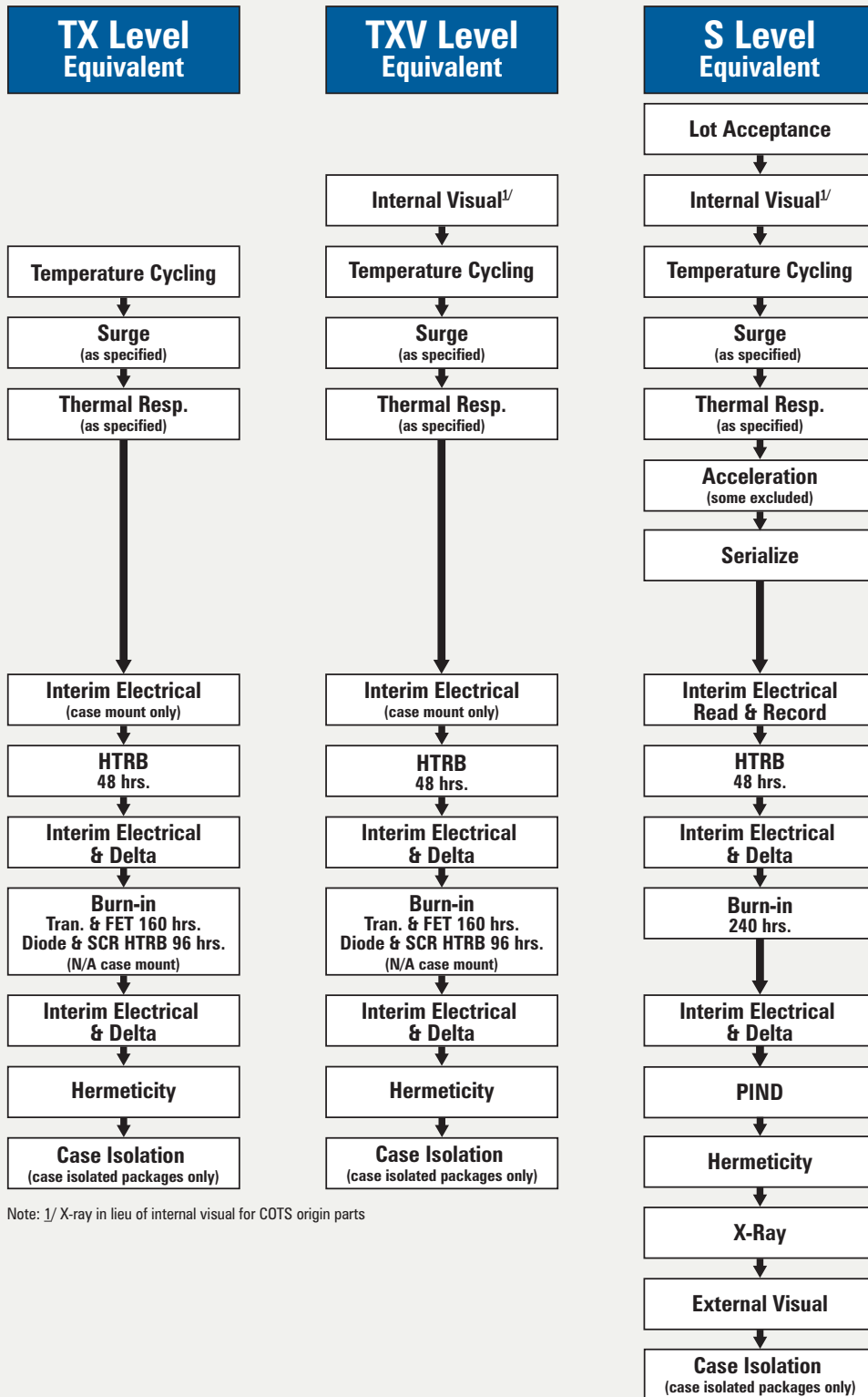
In-House Machine Shop / Packaging & Tooling Capabilities

Contact SSDI to discuss modifications and additional packaging options



1. TO-3
2. TO-66
3. TO-63
4. DO-5
5. DO-4
6. TO-61 (3 terminals)
7. TO-59
8. TO-61 (2 terminals)
9. SPA648
10. LCC28
11. LCC20
12. LCC16
13. LCC4
14. Milpack 3
15. SMD2
16. SMD1
17. SMD.5
18. SMD.22
19. Cerpack
20. Gullwing
21. SRM Button Tab
22. SRL Button Tab
22. SRM Surface Mount Square Tab (SMS)
23. Flat Leads
24. SRM Axial
25. 1N7068 Axial
26. Frit Glass Axial
27. Glass Sleeve Axial
28. Glass Sleeve Surface Mount Round Tab (SM)
29. Glass Sleeve Surface Mount Square Tab (SMS)
30. Frit Glass Surface Mount Square Tab (SMS)
31. TO-52
32. TO-82
33. TO-5
34. TO-39
35. Sedpack CT1 Front Mount
36. Sedpack 3
37. Sedpack 3 With Lead
38. Sedpack 2
39. Sedpack 2 With Lead
40. Sedpack 1
41. Sedpack 1 With Lead
42. TO-259
43. TO-258
44. TO-254
45. TO-257
46. TO-254Z
47. TO-254Z8
48. SDA475 HV Multiplier Rectifier Stack
49. SDAD103 Stackable HV Rectifier
50. STA60 HV Bidirectional TVS
51. SPA516 Dual Single Phase Bridge Assembly
52. SPX2091 HV Rectifier Bridge Stack
53. SDA267 Single Phase Bridge Rectifier Assembly
54. SDA669T Three Phase Bridge Rectifier Assembly
55. HV Stick
56. SDA380 Centertap Rectifier
57. SDA167 Three Phase Bridge Rectifier Assembly
58. SPMQ461 IGBT Power Module
59. SPMR494 Battery Charge Power Module
60. Battery Bypass Power Module

Solid State Devices Screening Per MIL-PRF-19500 Guidelines*



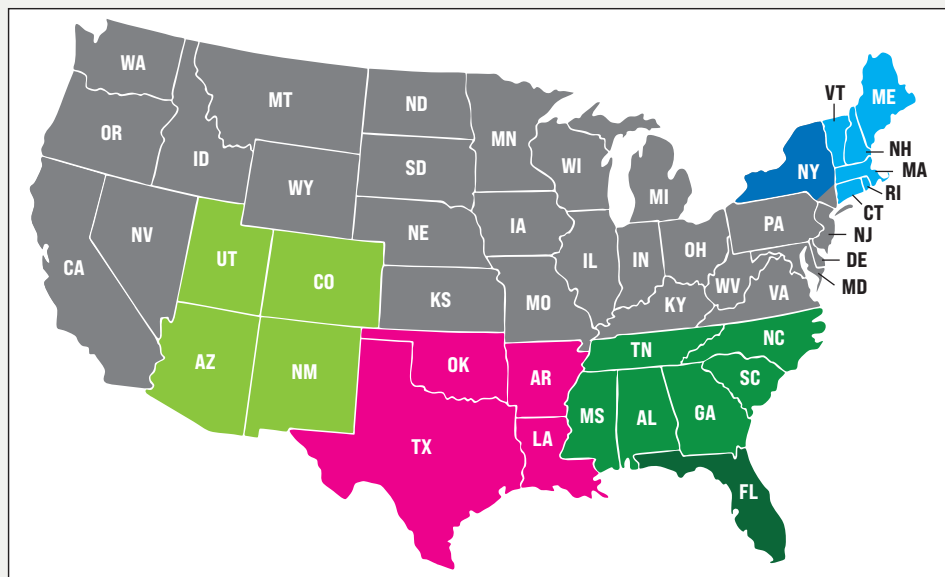
Note: 1/ X-ray in lieu of internal visual for COTS origin parts

*Specific Product Types May Have Alternate Screening Flows

Contact your local SSDI Representative or contact the factory directly at (562) 404-4474.

Email: ssdi@ssdi-power.com

Domestic Sales Representatives



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Mansfield, MA 02048

Phone: 508-337-3388

Website: www.mtgelectronics.com

sales@mtgelectronics.com

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111 Marsh Rd. Office Bldg.

Pittsford, NY 14534

Phone: 585-381-3186

Website: www.zimmermansales.com

sales@zimmermansales.com

Electronic Marketing Associates, Inc.

(AL, GA, MS, NC, SC, TN)

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Raleigh, NC 27615

Phone: 919-847-8800

info@emarep.com

FLA. Technology Sales, Inc. (FL)

Phone: 407-421-2366

eFax: 734-939-4411

Email: terry@flatechnology.com

SSDI Direct

Phone: 562-404-4474

Website: ssdi-power.com

Thom Luke Sales (CO, UT, AZ, NM)

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Centennial, CO 80112

Phone: 602-904-3756

Website: www.thomlukesales.com

CO / UT: colorado@thomlukesales.com

AZ / NM: arizona@thomlukesales.com

CentraMark Technical Sales Associates

(TX, OK, AR, LA)

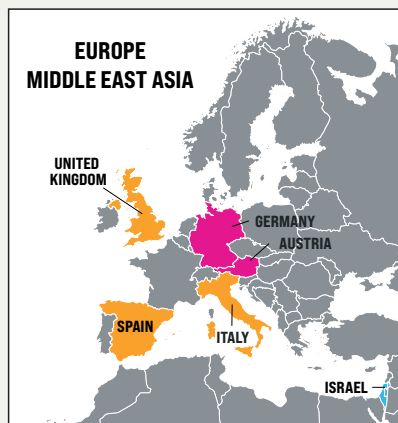
1705 Analog Dr.

Richardson, TX 75081-1944

Phone: 972-414-8188

Website: cmatex.com

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