Solid State Devices, Inc.
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1N8255 – 1N8257
Series

Qualified Level: JANS
i.a.w MIL-PRF-19500/774

4 - 6 AMP
SUBMINIATURE
HYPERFAST RECOVERY
RECTIFIER
100 - 200 VOLTS, 30 nsec

Designer's Data Sheet

QPL Part Number/Ordering Information[1/ 4/]

JANS 1N82 __ __

- **Reliability Level**: JANS
- **Package Type**: __ = Axial Leaded; US = Surface Mount Square Tab; SUS = Short Surface Mount
- **Voltage/Family**: 55 = 100 V, 56 = 150 V, 57 = 200 V

SSDI Part Number/Ordering Information[1/]

1N82 __ __ __

- **Screening[2/]**: __ = Not Screened; TX = TX Level; TXV = TXV Level; S = S Level
- **Package Type**: __ = Axial Leaded; SMS = Surface Mount Square Tab; ASMS = Short Surface Mount; FL = Flat Leads
- **Voltage/Family**: 55 = 100 V, 56 = 150 V, 57 = 200 V

FEATURES:

- Hyperfast Reverse Recovery: 30 nsec Max
- PIV to 200 Volts
- Hermetically Sealed
- Low Reverse Leakage
- Void Free Ceramic Frit Glass Construction
- For High Efficiency Applications
- Available in Axial, Square Tab, Square Tab (Short Tab), and Flat Leads Versions
- TX, TXV, and S-Level Screening Available[2/]
- Alternative to 1N5807, US thru 1N5811, US
- Available as a QPL product per MIL-PRF-19500/774

MAXIMUM RATINGS [3/]		SYMBOL	VALUE	UNIT
Peak Repetitive Reverse Voltage and DC Blocking Voltage	1N8255	V_{RRM}	100	**V**
	1N8256	V_{RWM}	150	
	1N8257	V_R	200	
Average Rectified Forward Current (Resistive Load, 60 Hz, Sine Wave)	Axial Lead & FL, T_L < +55°C	I_O	4	**A**
	US, SMS, T_{EC} < +125°C		6	
	SUS, ASMS, T_{EC} < +135°C		6	
Peak Surge Current (8.3 ms pulse, half sine wave superimposed on Io, allow junction to reach equilibrium between pulses, T_A = 25°C)		I_{FSM}	125	**A**
Operating & Storage Temperature		T_J & T_{STG}	-65 to +175	**°C**
Thermal Resistance	Junction to Lead for Axial & Flat Leads, L =.375"	$R_{\theta JL}$	32	**°C/W**
	Junction to End Tab for US, SMS	$R_{\theta JE}$	8.5	
	Junction to End Tab for SUS, ASMS	$R_{\theta JE}$	6.5	

NOTES:

1/ For ordering information, price, operating curves, and availability - contact factory.

2/ Screening based on MIL-PRF-19500. Screening flows available on request.

3/ Unless otherwise specified, all electrical characteristics @ 25°C.

4/ In the event of a conflict MIL-PRF-19500/774 takes precedence.

Axial Leaded (__) | **Surface Mount Square Tab (US / SMS & SUS / ASMS)** | **Flat Leads (FL)**

**dime used for size reference*

NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	**DATA SHEET #: RC0169H**	**DOCX**

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ELECTRICAL CHARACTERISTICS [3]		SYMBOL	MIN	MAX	UNIT
Instantaneous Forward Voltage Drop 1N8255 -1N8256	I_F = 1.0 A I_F = 3.0 A I_F = 4.0 A I_F = 6.0 A	V_{F1} V_{F2} V_{F3} V_{F4}	- - - -	0.810 0.865 0.875 0.925	**V**
Instantaneous Forward Voltage Drop 1N8257	I_F = 1.0 A I_F = 3.0 A I_F = 4.0 A I_F = 6.0 A	V_{F5} V_{F6} V_{F7} V_{F8}	- - - -	0.820 0.890 0.940 1.000	**V**
Breakdown Voltage I_R = 100 µA, pulse ≤ 20 ms	1N8255 1N8256 1N8257	BV_R	110 160 210	- - -	**V**
Instantaneous Forward Voltage Drop I_F = 4.0 A, T_A = -65°C		V_{F9}	-	1.25	**V**
Reverse Leakage Current $V_R = V_{RWM}$, pulsed ≤ 20 ms	T_A = +25°C T_A =+150°C	I_{R1} I_{R2}	- -	2 100	**µA**
Junction Capacitance V_R = 10 Vdc, f = 1 MHz	1N8255 -1N8256 1N8257	C_J	-	55 50	**pF**
Maximum Reverse Recovery Time I_F = 1.0 A, I_{RM} = 1.0 A, $I_{(REC)}$ = 0.1 A		t_{RR}	-	30	**ns**
Maximum Forward Recovery Time I_F = 50 mA		t_{FR}	-	15	**ns**

Fig. 1 Typical Leakage Current (1N8256)
I_R vs V_R vs T_C

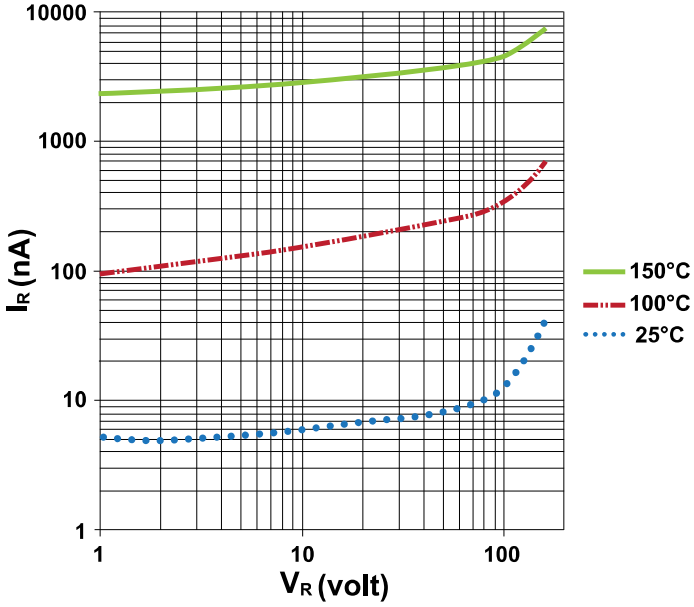
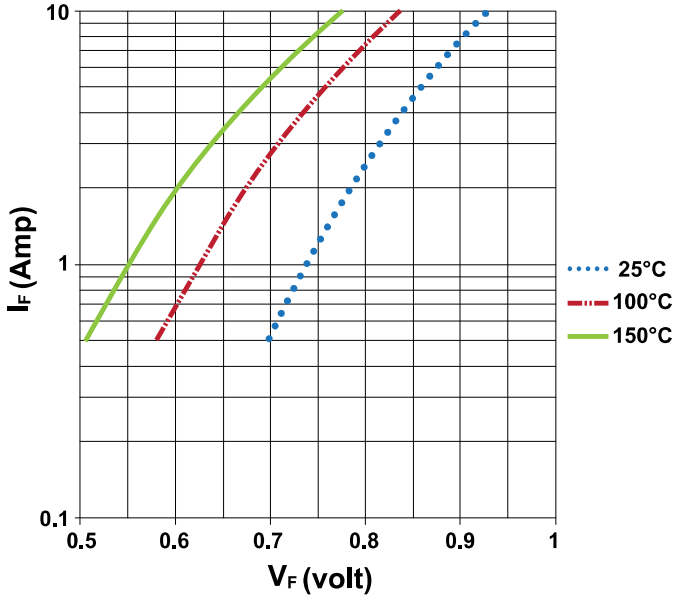


Fig. 2 Typical Forward Voltage (1N8256)
I_F vs V_F vs T_C



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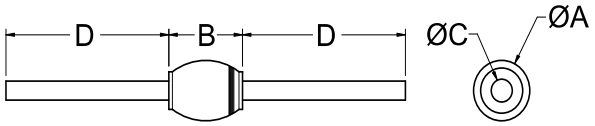
Package Outlines:

Axial Leaded (__)

DIMENSIONS (inches)

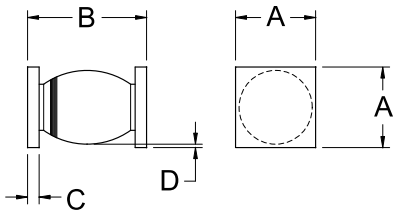
DIM.	MIN	MAX
A	---	.100
B	.140	.160
C	.027	.031
D	1.00	—



Surface Mount Square Tab

DIMENSIONS (inches)

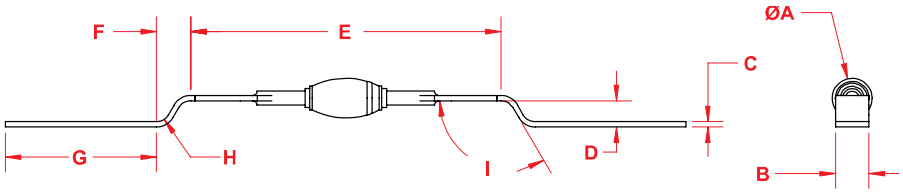
DIM.	(US, SMS)		(SUS, ASMS)	
	MIN	MAX	MIN	MAX
A	.097	.110	.097	.110
B	.190	.210	.150	.165
C	.022	.028	.022	.028
D	.003	—	.003	—



Flat Leads (FL)

DIMENSIONS (inches)

DIM.	MIN	MAX
A	--	.100
B	.050	.070
C	.009	.015
D	.051	.071
E	.620	.660
F	REF .070	
G	.295	.335
H	REF R.03	
I	REF 120°	



FEATURES FOR FLAT LEADS PACKAGE

- Solid silver leads
- Provide stress relief (customizable to customer specifications)
- Ideal for welding to BUS bar
- Typical application: solar array bypass / blocking diodes for photovoltaic (PV) panels