



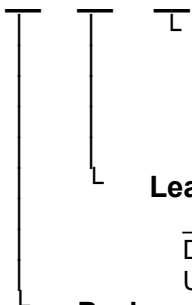
Solid State Devices, Inc.

14701 Firestone Blvd * La Mirada, CA 90638
Phone: (562) 404-4470 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFF40P10



Screening^{2/}

— = Not Screened
TX = TX Level
TXV = TXV Level
S = S Level

Lead Bend Options

— = Straight Leads
DB = Down Bend
UB = Up Bend

Package

M = TO-254

SFF40P10M

-40 AMP
P-Channel
POWER MOSFET
-100 Volts, 0.033 Ω typ

Features:

- Fast Switching Speed
- Low Total Gate Charge
- 5 V TTL/CMOS Compatible Operation
- Simple Drive
- Ceramic, Surface Mount Package
- Hermetically Sealed
- TX, TXV, and Space Level Screening Available
- Replacement for JANS2N7624U3

Maximum Ratings ^{3/}	Symbol	Value	Units
Drain – Source Voltage	V_{DS}	-100	V
Gate – Source Voltage	V_{GS}	± 20	V
Continuous Drain Current $T_J = 25^\circ\text{C}$ $T_C = 25^\circ\text{C}, V_{GS} = -10\text{ V}$	I_{D1} I_{D2}	-40 -23	A
Pulsed Drain Current	I_{DM}	-160	A
Power Dissipation $T_C = 25^\circ\text{C}$ $T_C = 125^\circ\text{C}$	P_D	150 50	W
Avalanche Current, Single Pulse	I_{AS}	-22	A
Repetitive Avalanche Energy, Single Pulse ^{4/}	E_{AS}	24.2	mJ
Operating & Storage Temperature	$T_{OP} \text{ \& } T_{STG}$	-55 to +175	$^\circ\text{C}$
Thermal Resistance	$R_{\theta JC}$	1	$^\circ\text{C/W}$

NOTES:

*Pulse Test: Pulse Width = 300 μsec , Duty Cycle = 2%.

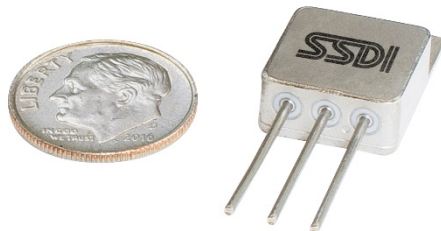
^{1/} For ordering information, price, and availability - contact factory.

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

^{3/} Unless otherwise specified, all electrical characteristics @25 $^\circ\text{C}$.

^{4/} Duty cycle $\leq 1\%$, L=0.5mH

TO-254 (M)



*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.

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SFF40P10M

Electrical Characteristics ^{3/}	Symbol	Min	Typ	Max	Unit
Drain to Source Breakdown Voltage $V_{GS} = 0\text{ V}, I_D = -250\text{ }\mu\text{A}$	BV_{DSS}	-100	—	—	V
Drain to Source On State Resistance* $V_{GS} = -4.5\text{ V}, I_D = -14\text{ A}$ $V_{GS} = -10\text{ V}, I_D = -17\text{ A}$	$R_{DS(on)}$	— —	.036 .033	.048 .040	Ω
Gate Threshold Voltage $V_{DS} = V_{GS}, I_D = -250\text{ }\mu\text{A}$	$V_{GS(th)}$	-1.5	-2.0	-2.5	V
Gate Threshold Voltage Coefficient $V_{DS} = V_{GS}, I_D = -250\text{ }\mu\text{A}$	$\frac{\Delta V_{GS}}{\Delta T_J}$	—	5	—	mV/°C
Forward Transconductance $V_{DS} = -15\text{ V}, I_D = -17\text{ A}^*$	g_{fs}	—	47	—	S
Zero Gate Voltage Drain Current $V_{DS} = -100\text{ V}, V_{GS} = 0\text{ V}$	I_{DSS}	— —	.015 —	-1.0 -15.0	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	I_{GSS}	— —	— —	-100 100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	Q_g Q_{gs} Q_{gd}	— — —	13 8 5	36 15 18	nC
Turn on Delay Time Rise Time Turn off Delay Time Fall Time	$t_{(on)}$ t_r $t_{d(off)}$ t_f	— — — —	— — — —	95 450 90 120	nsec
Input Capacitance Output Capacitance Reverse Transfer Capacitance	C_{iss} C_{oss} C_{rss}	— — —	1140 130 90	— — —	pF
Gate Resistance f = 1 MHz, open drain	R_G	—	7	—	Ω
Continuous Source Current (Body Diode)^{4/}	I_S	—	—	-22	A
Pulsed Source Current (Body Diode)	I_{SM}	—	—	-30	A
Diode Forward Voltage $I_S = \text{Rated } I_D$ $V_{GS} = 0\text{ V}$ $T_J = 25^\circ\text{C}$	V_{SD}	—	-1	-1.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	t_{rr} Q_{rr}	— —	55 137	75 —	nsec nC
Forward Turn-On Time	t_{on}	Intrinsic turn-on is negligible (turn-on dominated by $L_S + L_D$)			

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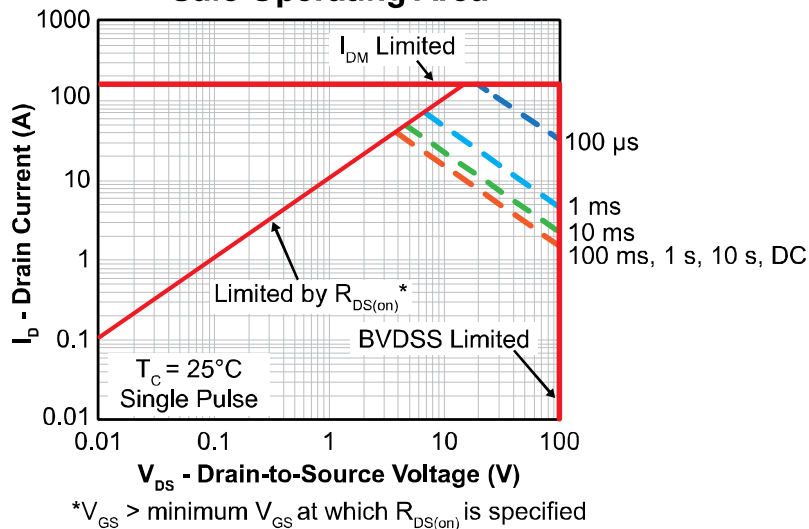


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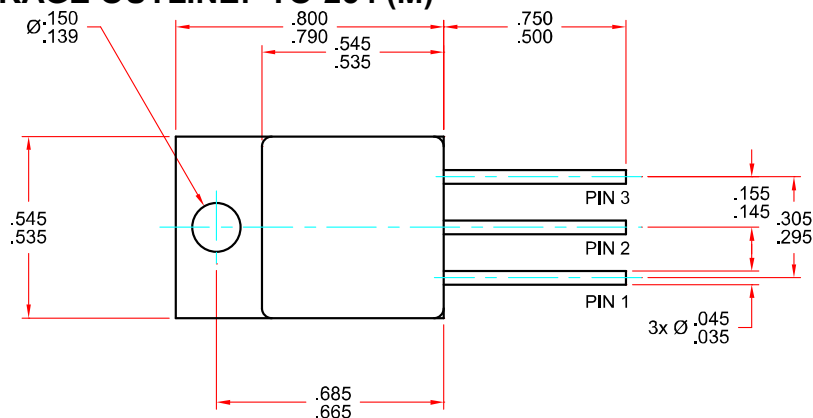
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SFF40P10M

Safe Operating Area



PACKAGE OUTLINE: TO-254 (M)

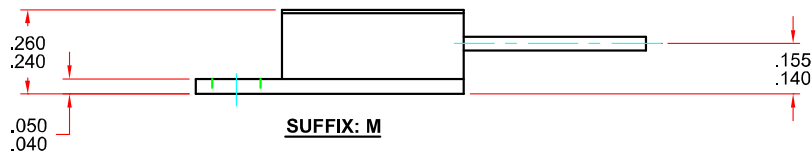


PIN ASSIGNMENT (Standard)

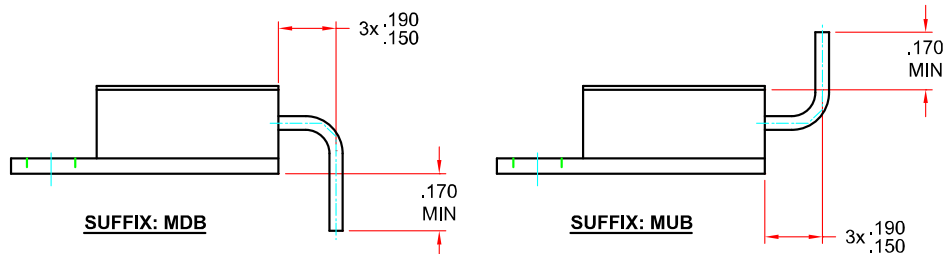
Package	Drain	Source	Gate
TO-254 (M)	Pin 1	Pin 2	Pin 3

Available Part Numbers:

SFF40P10M
SFF40P10MDB
SFF40P10MUB



SUFFIX: M



SUFFIX: MDB

SUFFIX: MUB

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