



Solid State Devices, Inc.

14830 Valley View Blvd * La Mirada, Ca 90638

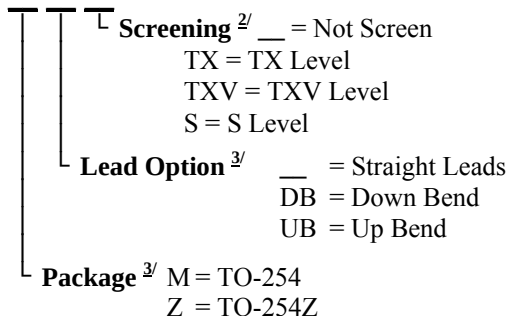
Phone: (562) 404-7855 * Fax: (562) 404-1773

ssdi@ssdi-power.com * www.ssdi-power.com

DESIGNER'S DATA SHEET

Part Number / Ordering Information ^{1/}

SFF450



SFF450M
SFF450Z

13 AMP / 500 Volts

0.4 Ω

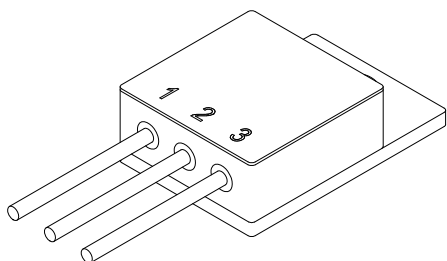
N-Channel POWER MOSFET

Features:

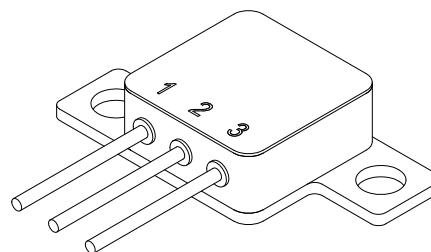
- Rugged Construction with Polysilicon Gate Cell
- Low $R_{DS(ON)}$ and High Transconductance
- Excellent High Temperature Stability
- Very Fast Switching Speed
- Fast Recovery and Superior dV/dt Performance
- Increased Reverse Energy Capability
- Low Input and Transfer Capacitance for Easy Paralleling
- Ceramic Seals Available for Improved Hermeticity
- Hermetically Sealed Surface Mount Power Package
- TX, TXV, Space Level Screening Available
- Replacement for IRFM450 Types

Maximum Ratings		Symbol	Value	Units
Drain – Source Voltage		V_{DS}	500	Volts
Gate – Source Voltage		V_{GS}	± 20	Volts
Continuous Collector Current		I_D	13	Amps
Operating & Storage Temperature		Top & Tstg	-55 to +150	$^{\circ}C$
Maximum Thermal Resistance Junction to Case		$R_{\theta JC}$	1	$^{\circ}C/W$
Total Device Dissipation	$T_C = 25^{\circ}C$ $T_C = 55^{\circ}C$	P_D	125 95	W

TO-254 (M)



TO-254Z (Z)



For Pin Out Configuration and Optional Lead Bend, Se Page 3.

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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DOC



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SFF450M

SFF450Z

Electrical Characteristics @ T _J = 25°C (Unless Otherwise Specified)		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage (VGS=0 V, ID=250 μA)		BV _{DSS}	500	—	—	Volts
Drain to Source On State Resistance (VGS=10 V, ID= 7.2 A)		R _{DS(on)}	—	0.35	0.40	Ω
On State Drain Current (VDS>ID(on) X RDS(on) Max, VGS=10 V)		I _{D(on)}	13	—	—	A
Gate Threshold Voltage (VDS=VGS, ID= 250 μA)		V _{GS(th)}	2.0	—	4.0	V
Forward Transconductance (VDS≥ 50 V, IDS= 7.2 A)		g _{fs}	8.7	131	—	mho
Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125°C)		I _{DSS}	— —	— —	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS	I _{GSS}	— —	— —	+100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	VGS=10 Volts 80% rated VDS Rated ID	Q _g Q _{gs} Q _{gd}	— — —	83 11 42	120 17 64	nC
Turn on Delay Time Rise Time Turn on Delay Time Fall Time	VDD=50% Rated VDS 50% Rated ID RG= 6.2Ω PD= 20 W	td _(on) tr td _(off) tf	— — — —	18 44 70 40	27 66 100 60	nsec
Diode Forward Voltage (IS= Rated ID, VGS=0 V, TJ=25°C)		V _{SD}	—	—	1.4	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25°C IF= Rated ID di/dt=100A/μsec	t _{rr} Q _{RR}	280 3.2	580 6.7	1200 14	nsec μC
Input Capacitance Input Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f=1 MHz	C _{iss} C _{oss} C _{rss}	— — —	2700 350 75	— — —	pF

For thermal derating curves and other characteristics please contact SSDI Marketing Department.

Available Part Numbers:

**SFF450M; SFF450MDB; SFF450MUB;
SFF450Z; SFF450ZDB; SFF450ZUB;**

PIN ASSIGNMENT (Standard)

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

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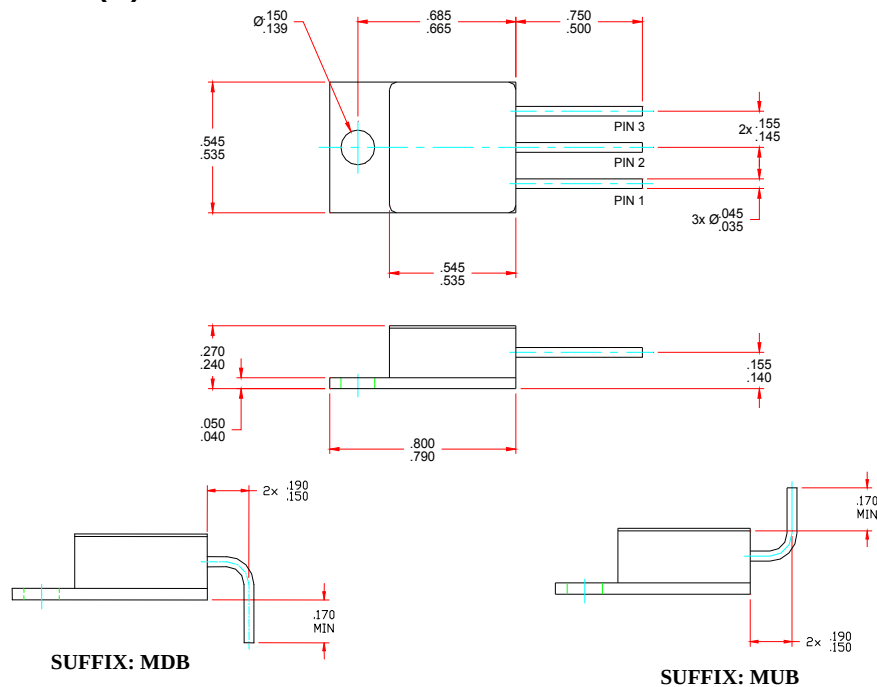
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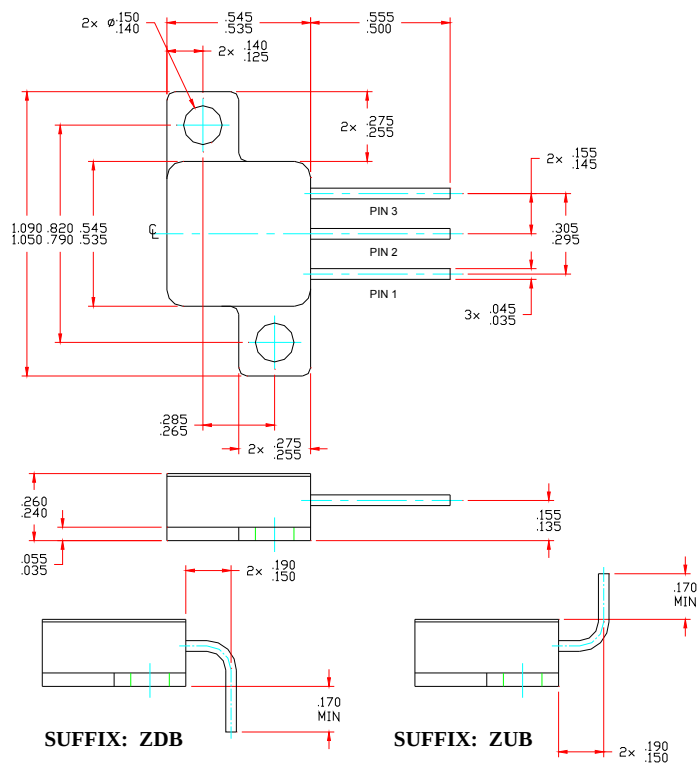
SFF450M

SFF450Z

Case Outline: TO-254 (M)



Case Outline: TO-254Z (Z)



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