Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFF250M
SFF250Z

DESIGNER'S DATA SHEET

30 AMP / 200 Volts
0.060 Ω typical
N-Channel POWER MOSFET

Part Number / Ordering Information [1/]

SFF250

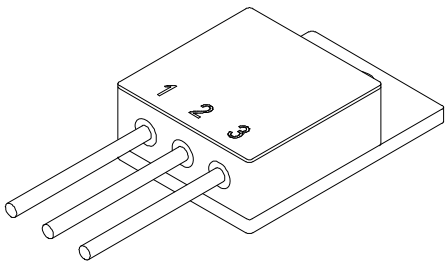
- **Screening** [2/] __ = Not Screen
  TX = TX Level
  TXV = TXV Level
  S = S Level
- **Lead Option** [3/] __ = Straight Leads
  DB = Down Bend
  UB = Up Bend
- **Package** [3/] M = TO-254
  Z = TO-254Z

Features:

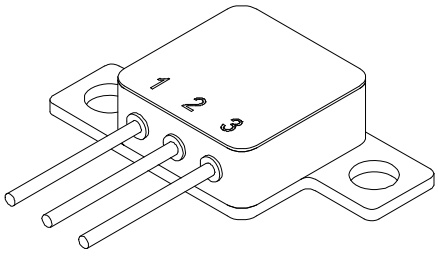
- Rugged Construction with Polysilicon Gate Cell
- Low $R_{DS(ON)}$ and High Transconductance
- Excellent High Temperature Stability
- Very Fast Switching Speed
- Fast Recovery and Superior dV/dt Performance
- Increased Reverse Energy Capability
- Low Input and Transfer Capacitance for Easy Paralleling
- Ceramic Seals Available for Improved Hermeticity
- Hermetically Sealed Surface Mount Power Package
- TX, TXV, Space Level Screening Available
- Replacement for IRFM250 Types

Maximum Ratings		Symbol	Value	Units
Drain – Source Voltage		V_{DS}	200	**Volts**
Gate – Source Voltage		V_{GS}	±20	**Volts**
Continuous Collector Current		I_D	30	**Amps**
Operating & Storage Temperature		**Top & Tstg**	-55 to +150	**ºC**
Maximum Thermal Resistance Junction to Case		$R_{\theta JC}$	1	**ºC/W**
Total Device Dissipation	T_C = 25ºC T_C = 55ºC	P_D	125 95	**W**

TO-254 (M)



TO-254Z (Z)



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

Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFF250M
SFF250Z

Electrical Characteristics @ T_J = 25°C (Unless Otherwise Specified)		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage (VGS= 0 V, ID= 250µA)		BV_{DSS}	200	—	—	V
Drain to Source On State Resistance (VGS= 10 V, ID= 18 A)		$R_{DS(on)}$	—	0.06	0.085	Ω
Gate Threshold Voltage (VDS= VGS, ID= 250µA)		$V_{GS(th)}$	2	3	5	V
Forward Transconductance (VDS≥ IN(on) X RDS(on) Max, ID= 18 A)		g_{fs}	10	17	—	mho
Zero Gate Voltage Drain Current (VDS= 200 V, VGS= 0 V) (VDS= 200 V, VGS= 0 V, TA= 125ºC)		I_{DSS}	— —	— —	25 250	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 V VDS= 100 V ID= 30 A	Q_g Q_{gs} Q_{gd}	— — —	70 18 35	120 25 65	nC
Turn on Delay Time **Rise Time** **Turn on Delay Time** **Fall Time**	VDD= 100 V ID= 15 A RG= 6.2Ω	$td_{(on)}$ tr $td_{(off)}$ tf	— — — —	29 35 75 35	30 180 100 120	nsec
Diode Forward Voltage (IS= 30 A, VGS= 0 V, TJ= 25ºC)		V_{SD}	— —	1.1	1.5	V
Diode Reverse Recovery Time **Reverse Recovery Charge**	T_J= 25ºC IF= 10 A di/dt= 100 A/µsec	t_{rr} Q_{RR}	— —	150 2.0	630 8	nsec µC
Input Capacitance **Input Capacitance** **Reverse Transfer Capacitance**	VGS= 0 Volts VDS= 25 Volts f= 1 MHz	C_{iss} C_{oss} C_{rss}	— — —	4200 650 120	— — —	pF

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

Available Part Numbers:

SFF250M; SFF250MDB; SFF250MUB;
SFF250Z; SFF250ZDB; SFF250ZUB;

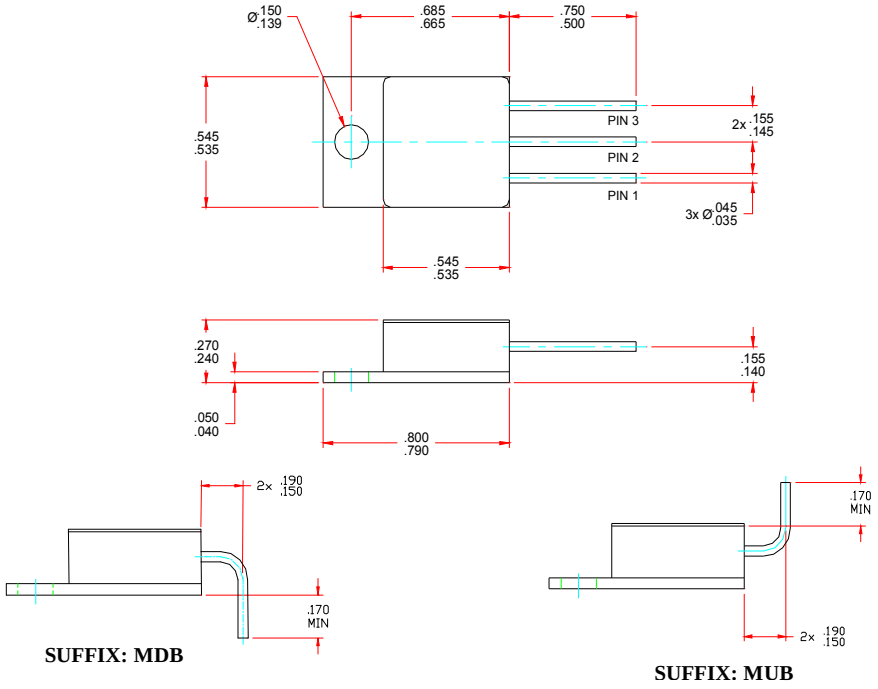
PIN ASSIGNMENT (Standard)

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

Solid State Devices, Inc.
14701 Firestone Blvd * La Mirada, Ca 90638
Phone: (562) 404-4474 * Fax: (562) 404-1773
ssdi@ssdi-power.com * www.ssdi-power.com

SFF250M
SFF250Z

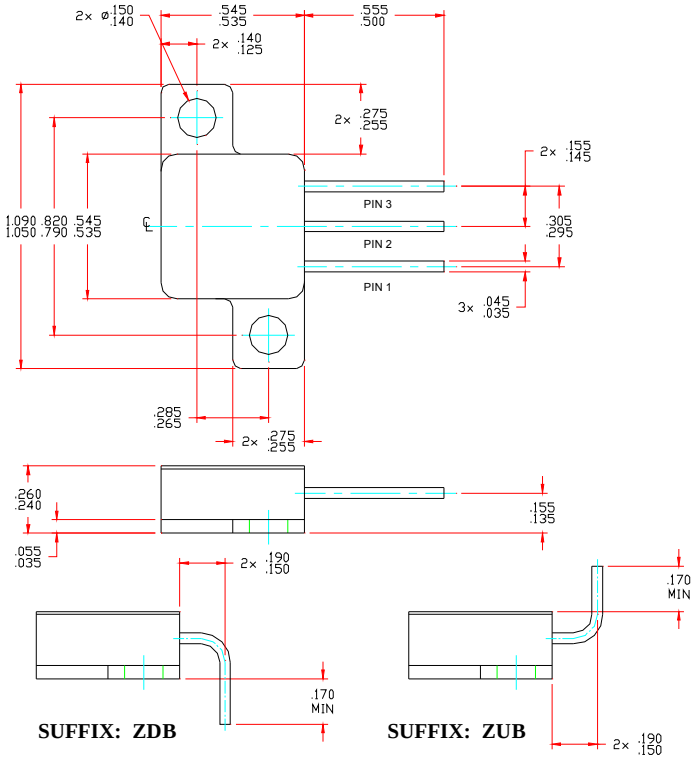
Case Outline: TO-254 (M)



SUFFIX: MDB

SUFFIX: MUB

Case Outline: TO-254Z (Z)



SUFFIX: ZDB

SUFFIX: ZUB

NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.	**DATA SHEET #: F00049E**	**DOC**