

14849 Firestone Boulevard · La Mirada, CA 90638  
 Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

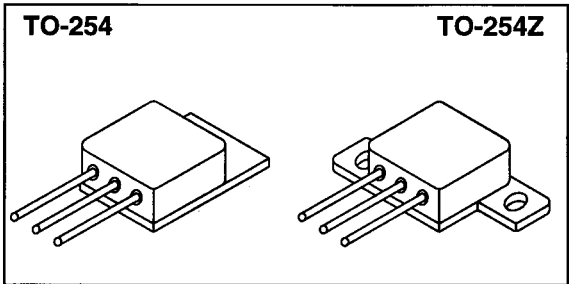
**Designer's Data Sheet**

**FEATURES:**

- Rugged construction with poly silicon gate
- Low RDS(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
- Hermetically sealed power surface mount package
- TX, TXV and Space Level screening available
- Replaces: IRFM250 Types

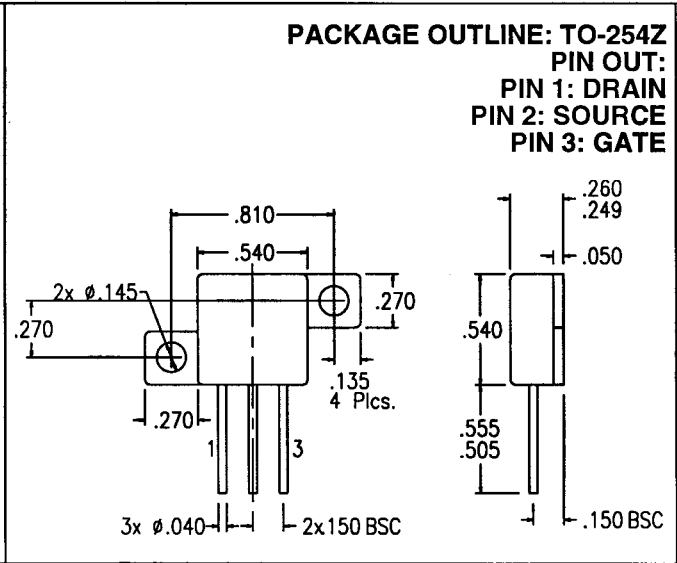
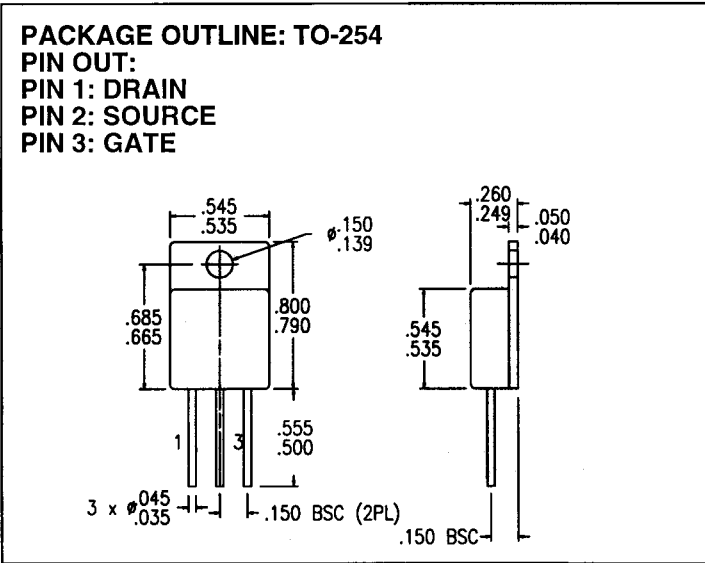
**SFF250M-1**  
**SFF250Z-1**

**30 AMP**  
**200 VOLTS**  
**0.075 Ω**  
**N-CHANNEL**  
**POWER MOSFET**



**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V <sub>DS</sub>	200	Volts
Gate to Source Voltage	V <sub>GS</sub>	± 20	Volts
Continuous Drain Current	I <sub>D</sub>	30	Amps
Operating and Storage Temperature	T <sub>op</sub> & T <sub>stg</sub>	-55 to +150	°C
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	1	°C/W
Total Device Dissipation @ TC=25°C	P <sub>D</sub>	125	Watts
Total Device Dissipation @ TC=55°C		95	



Available with Glass or Ceramic Seals. Contact Factory for details.

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

**DATA SHEET #: F00303 B**

**SFF250M-1**  
**SFF250Z-1**

PRELIMINARY



**SOLID STATE DEVICES, INC**

14849 Firestone Boulevard · La Mirada, CA 90638  
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

**ELECTRICAL CHARACTERISTICS @ T<sub>J</sub>=25° C (Unless Otherwise Specified)**

RATING	SYMBOL	MIN	TYP	MAX	UNIT
<b>Drain to Source Breakdown Voltage</b> (VGS=0 V, ID=250µA)	<b>BVDSS</b>	200	---	---	<b>V</b>
<b>Drain to Source on State Resistance</b> (VGS=10 V, ID=60% Rated ID)	<b>RDS(on)</b>	---	0.07	0.075	<b>Ω</b>
<b>On State Drain Current</b> (VDS > ID(on) X RDS(on) Max, VGS=10 V)	<b>ID(on)</b>	30	---	---	<b>A</b>
<b>Gate Threshold Voltage</b> (VDS=VGS, ID=250µA)	<b>VGS(th)</b>	2	3	4	<b>V</b>
<b>Forward Transconductance</b> (VDS > ID(on) X RDS(on) Max, IDS=60% rated ID)	<b>gfs</b>	13	15	---	<b>S(Ω)</b>
<b>Zero Gate Voltage Drain Current</b> (VDS=80% rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125° C)	<b>IDSS</b>	---	---	250 1000	<b>µA</b>
<b>Gate to Source Leakage Forward</b> <b>Gate to Source Leakage Reverse</b>	At rated VGS <b>IGSS</b>	---	---	100 -100	<b>nA</b>
<b>Total Gate Charge</b> <b>Gate to Source Charge</b> <b>Gate to Drain Charge</b>	VGS=10 Volts 50% rated VDS Rated ID <b>Qg</b> <b>Qgs</b> <b>Qgd</b>	---	80 12 44	120 20 65	<b>nC</b>
<b>Turn on Delay Time</b> <b>Rise Time</b> <b>Turn Off Delay Time</b> <b>Fall Time</b>	VDD=50% rated VDS 50% rated ID RG= 6.2 Ω <b>td(on)</b> <b>tr</b> <b>td(off)</b> <b>tf</b>	---	20 120 70 80	30 180 100 120	<b>nsec</b>
<b>Diode Forward Voltage</b> (IS=rated ID, VGS=0 V, T <sub>J</sub> =25° C)	<b>VSD</b>	---	1.1	2.0	<b>V</b>
<b>Diode Reverse Recovery Time</b> <b>Reverse Recovery Charge</b>	T <sub>J</sub> =25° C IF=10A di/dt=100 A/µsec <b>t<sub>rr</sub></b> <b>QRR</b>	140 1.8	300 3.8	630 8	<b>nsec</b> <b>µC</b>
<b>Input Capacitance</b> <b>Output Capacitance</b> <b>Reverse Transfer Capacitance</b>	VGS=0 Volts VDS=25 Volts f= 1 MHz <b>Ciss</b> <b>Coss</b> <b>Crss</b>	---	2600 650 150	---	<b>pF</b>

SAFE OPERATING AREA (S.O.A.)  
T<sub>C</sub> = 25 C, D.C. CONDITION

