

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

Designer's Data Sheet

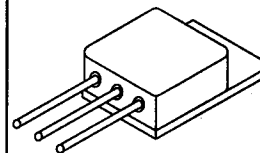
FEATURES:

- 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

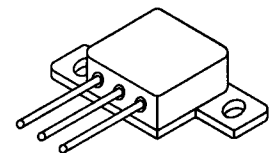
SFF250M-1
SFF250Z-1

30 AMP
200 VOLTS
0.075 Ω
N-CHANNEL
POWER MOSFET

TO-254



TO-254Z

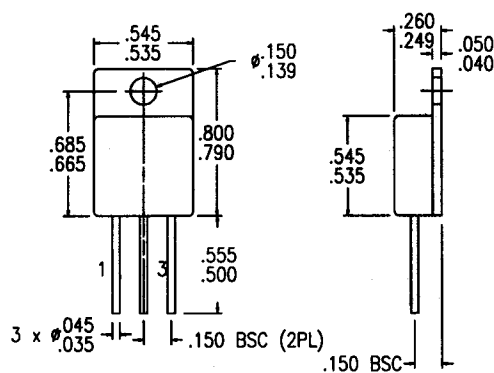


MAXIMUM RATINGS

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

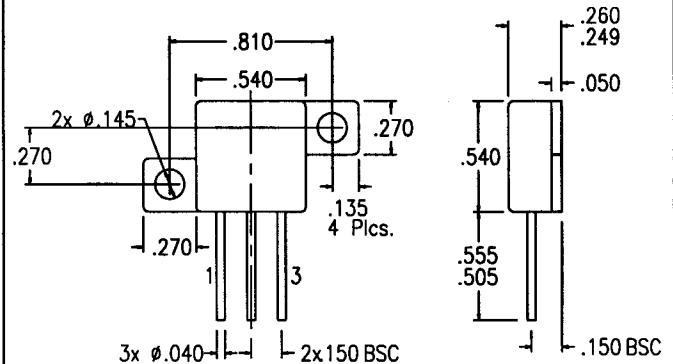
PACKAGE OUTLINE: TO-254

PIN OUT:
PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE



PACKAGE OUTLINE: TO-254Z

PIN OUT:
PIN 1: DRAIN
PIN 2: SOURCE
PIN 3: GATE



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

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ELECTRICAL CHARACTERISTICS @ $T_J=25^\circ\text{C}$ (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage ($V_{GS}=0\text{ V}$, $I_D=250\mu\text{A}$)		BV_{DSS}	200	---	---	V
Drain to Source on State Resistance ($V_{GS}=10\text{ V}$, $I_D=60\%$ Rated ID)		$R_{DS(on)}$	---	0.07	0.075	Ω
On State Drain Current ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $V_{GS}=10\text{ V}$)		$I_D(on)$	30	---	---	A
Gate Threshold Voltage ($V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$)		$V_{GS(th)}$	2	3	4	V
Forward Transconductance ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $I_{DS}=60\%$ rated ID)		g_{fs}	13	15	---	$S(\tau)$
Zero Gate Voltage Drain Current ($V_{DS}=80\%$ rated voltage, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated V_{DS} , $V_{GS}=0\text{ V}$, $T_A=125^\circ\text{C}$)		I_{DSS}	---	---	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated V_{GS}	I_{GSS}	---	---	100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	$V_{GS}=10\text{ Volts}$ 50% rated V_{DS} Rated ID	Q_g Q_{gs} Q_{gd}	---	80 12 44	120 20 65	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated V_{DS} 50% rated ID $R_G=6.2\Omega$	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	20 120 70 80	30 180 100 120	nsec
Diode Forward Voltage ($I_S=\text{rated ID}$, $V_{GS}=0\text{ V}$, $T_J=25^\circ\text{C}$)		V_{SD}	---	1.1	2.0	V
Diode Reverse Recovery Time Reverse Recovery Charge	$T_J=25^\circ\text{C}$ $I_F=10\text{A}$ $di/dt=100\text{ A}/\mu\text{sec}$	t_{rr} Q_{RR}	140 1.8	300 3.8	630 8	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	$V_{GS}=0\text{ Volts}$ $V_{DS}=25\text{ Volts}$ $f=1\text{ MHz}$	C_{iss} C_{oss} C_{rss}	---	2600 650 150	---	pF

SAFE OPERATING AREA (S.O.A.)
 $T_C = 25^\circ\text{C}$, D.C. CONDITION

