



PRELIMINARY

SOLID STATE DEVICES, INC

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

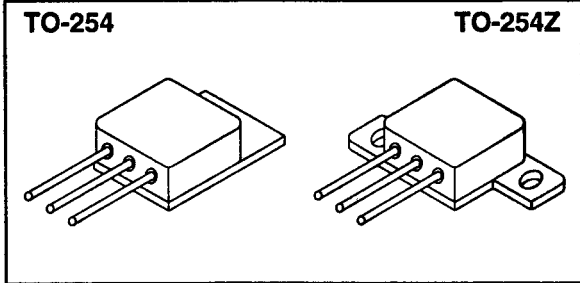
**SFF10N100M**  
**SFF10N100Z**

**Designer's Data Sheet**

**FEATURES:**

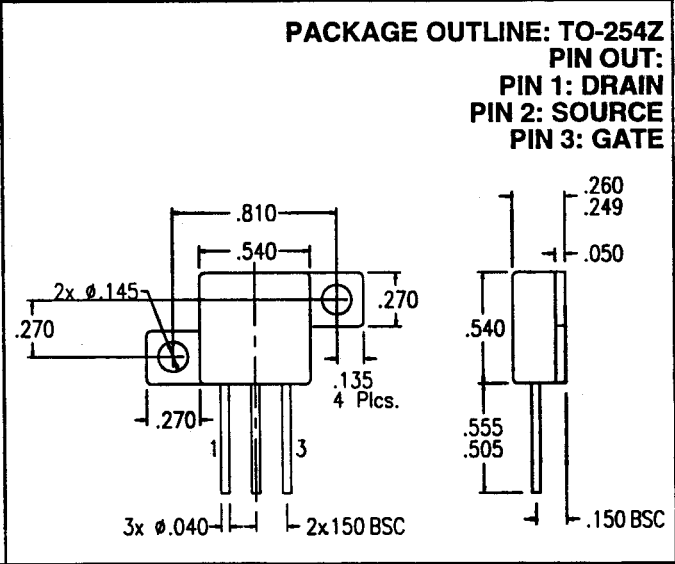
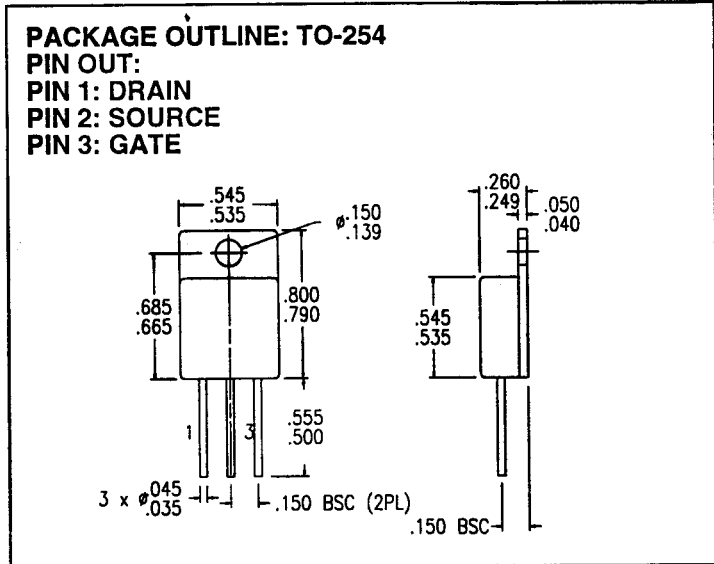
- Rugged construction with polysilicon gate
- Low RDS(on) and high transconductance
- Excellent high temperature stability
- Very fast switching speed
- Fast recovery and superior dv/dt performance
- Increased reverse energy capability
- Low input and transfer capacitance for easy paralleling
- Ceramic Seals for improved hermeticity
- Hermetically sealed power package
- TX, TXV and Space Level screening available
- Replaces: IXTH10N100 Types

**10 AMP**  
**1000 VOLTS**  
**1.2 Ω**  
**N-CHANNEL**  
**POWER MOSFET**



**MAXIMUM RATINGS:**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V <sub>DS</sub>	1000	Volts
Gate to Source Voltage	V <sub>GS</sub>	±20	Volts
Continuous Drain Current	I <sub>D</sub>	10	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>	0.83	°C/W
Total Device Dissipation @ TC=25°C	P <sub>D</sub>	150	Watts
Total Device Dissipation @ TC=55°C		114	



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.	<b>DATA SHEET #: F00177 D</b>	<b>MED</b>
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**ELECTRICAL CHARACTERISTICS @ T<sub>J</sub>=25°C (Unless Otherwise Specified)**

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (V <sub>GS</sub> =0 V, I <sub>D</sub> =3mA)		BV <sub>DSS</sub>	1000	---	---	V
Drain to Source on State Resistance (V <sub>GS</sub> =10 V, I <sub>D</sub> =50% Rated ID)		R <sub>DS(on)</sub>	---	1.05	1.2	Ω
On State Drain Current (V <sub>DS</sub> = 15V, V <sub>GS</sub> =10 V)		I <sub>D(on)</sub>	10	---	---	A
Gate Threshold Voltage (V <sub>DS</sub> ≥V <sub>GS</sub> , I <sub>D</sub> =4mA)		V <sub>GS(th)</sub>	2.0	---	4.5	V
Forward Transconductance (V <sub>DS</sub> > I <sub>D(on)</sub> X R <sub>DS(on)</sub> Max, I <sub>DS</sub> =50% rated ID)		g <sub>fs</sub>	5	8	---	S(Ω)
Zero Gate Voltage Drain Current (V <sub>DS</sub> =max rated voltage, V <sub>GS</sub> =0 V) (V <sub>DS</sub> =80% rated V <sub>DS</sub> , V <sub>GS</sub> =0 V, T <sub>A</sub> =125°C)		I <sub>DSS</sub>	---	---	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated V <sub>GS</sub>	I <sub>GSS</sub>	---	---	+100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	V <sub>GS</sub> =10 Volts 50% rated V <sub>DS</sub> Rated ID	Q <sub>g</sub> Q <sub>gs</sub> Q <sub>gd</sub>	---	110 20 40	155 45 80	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	V <sub>DD</sub> =50% rated V <sub>DS</sub> 50% Rated ID R <sub>G</sub> =6.2Ω V <sub>GS</sub> =10V	t <sub>d(on)</sub> t <sub>r</sub> t <sub>d(off)</sub> t <sub>f</sub>	---	30 20 110 40	50 50 130 50	nsec
Diode Forward Voltage (I <sub>S</sub> =rated ID, V <sub>GS</sub> =0 V, T <sub>J</sub> =25°C)		V <sub>SD</sub>	---	---	1.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	T <sub>J</sub> =25°C I <sub>F</sub> =rated ID di/dt=100 A/μsec	t <sub>rr</sub> Q <sub>RR</sub>	---	850 ---	1200 ---	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	V <sub>GS</sub> =0 Volts V <sub>DS</sub> =25 Volts f= 1 MHz	C <sub>iss</sub> C <sub>oss</sub> C <sub>rss</sub>	---	4000 310 70	---	pF

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

