



**SOLID STATE DEVICES, INC.**

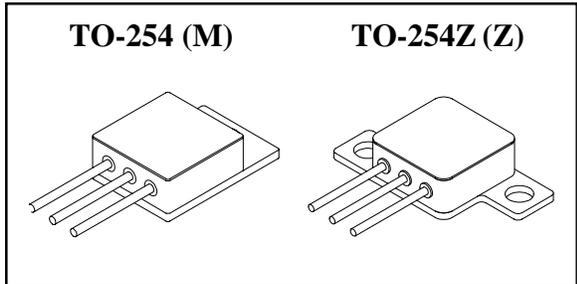
14830 Valley View Blvd \* La Mirada, Ca 90638  
 Phone: (562) 404-7855 \* Fax: (562) 404-1773

**DESIGNER'S DATA SHEET**

- FEATURES:**
- Rugged construction with poly silicon gate
  - Ultra 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 package
  - TX, TXV and Space Level screening available
  - Replaces: SMM70N10 Types

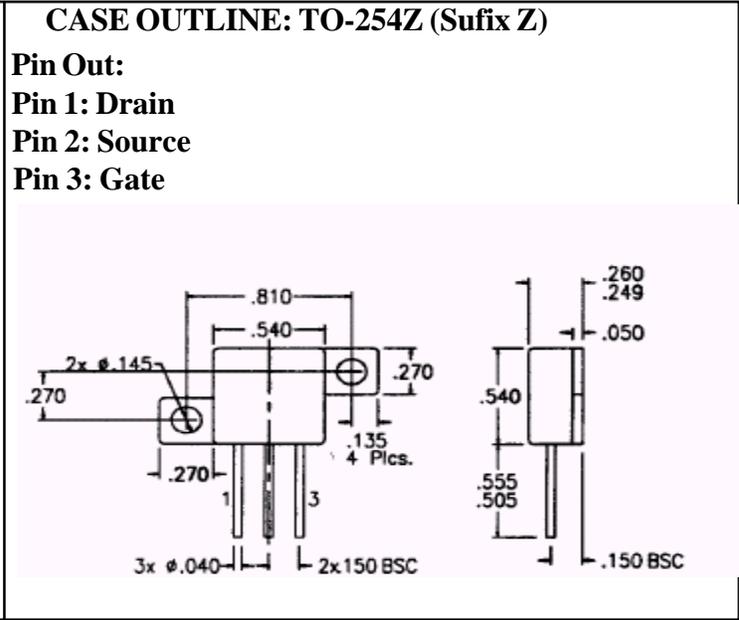
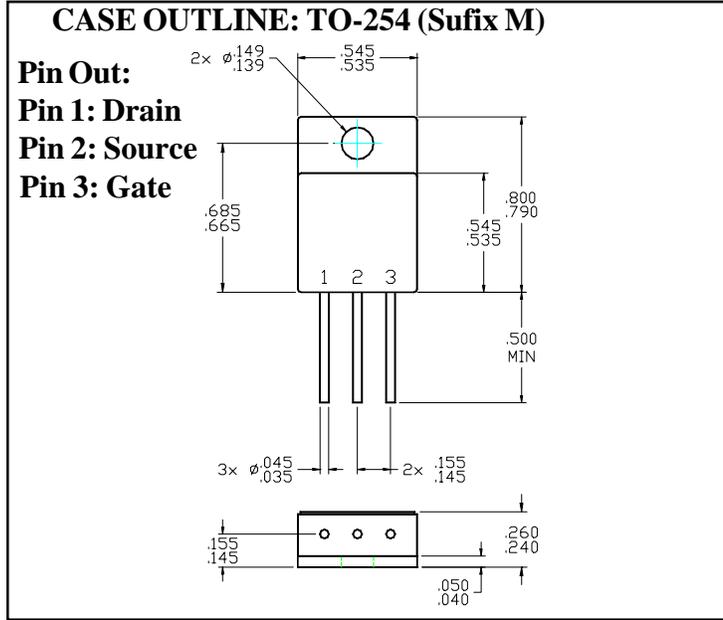
**SFF70N10M**  
**SFF70N10Z**

**70 AMP**  
**600 VOLT**  
**0.030Ω**  
**N-CHANNEL**  
**POWER MOSFET**



**MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V <sub>DS</sub>	100	Volts
Gate to Source Voltage	V <sub>GS</sub>	± 20	Volts
Continuous Drain Current	I <sub>D</sub>	56 <sup>1/2</sup>	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>	.83	°C/W
Total Device Dissipation	P <sub>D</sub>	@ TC = 25°C	150
		@ TC = 55°C	114



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

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

**DATA SHEET #: F00247B**

**SFF70N10M**  
**SFF70N10Z**



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

RATING	SYMBOL	MIN	TYP	MAX	UNIT	
<b>Drain to Source Breakdown Voltage</b> (V <sub>GS</sub> =0 V, I <sub>D</sub> =250μA)	<b>BV<sub>DSS</sub></b>	100	-	-	<b>V</b>	
<b>Drain to Source on State Resistance</b> (V <sub>GS</sub> =10 V, T <sub>c</sub> =150°C)	<b>R<sub>DS(on)</sub></b>	-	0.025	0.03	<b>Ω</b>	
<b>On State Drain Current</b> (V <sub>DS</sub> > I <sub>D(on)</sub> x R <sub>DS(on)</sub> Max, V <sub>GS</sub> =10 V)	<b>I<sub>D(on)</sub></b>	70	-	-	<b>A</b>	
<b>Gate Threshold Voltage</b> (V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA)	<b>V<sub>GS(th)</sub></b>	2	-	4.0	<b>V</b>	
<b>Forward Transconductance</b> (V <sub>DS</sub> > I <sub>D(on)</sub> X R <sub>DS</sub> (on) Max, I <sub>DS</sub> =60% rated I <sub>D</sub> )	<b>g<sub>fs</sub></b>	20	40	-	<b>Smho</b>	
<b>Zero Gate Voltage Drain Current</b> (V <sub>DS</sub> =80% rated voltage, V <sub>GS</sub> =0V) (V <sub>DS</sub> =80% rated V <sub>DS</sub> , V <sub>GS</sub> =0V, T <sub>A</sub> =125°C)	<b>I<sub>DSS</sub></b>	-	-	250 250	<b>μA</b>	
<b>Gate to Source Leakage Forward</b> <b>Gate to Source Leakage Reverse</b>	At rated V <sub>GS</sub>	<b>I<sub>GSS</sub></b>	- -	- -	+100 -100	<b>nA</b>
<b>Total Gate Charge</b> <b>Gate to Source Charge</b> <b>Gate to Drain Charge</b>	V <sub>GS</sub> =10 V 80% rated V <sub>DS</sub> Rated I <sub>D</sub>	<b>Q<sub>g</sub></b> <b>Q<sub>gs</sub></b> <b>Q<sub>gd</sub></b>	- - -	110 30 50	140 40 80	<b>nC</b>
<b>Turn on Delay Time</b> <b>Rise Time</b> <b>Turn off Delay Time</b> <b>Fall Time</b>	V <sub>DD</sub> =50% rated V <sub>DS</sub> I <sub>D</sub> =70A R <sub>G</sub> =8Ω V <sub>GS</sub> =10V	<b>t<sub>d</sub> (on)</b> <b>tr</b> <b>t<sub>d</sub> (off)</b> <b>tf</b>	- - - -	25 15 80 15	40 180 100 40	<b>nsec</b>
<b>Diode Forward Voltage</b> (I <sub>S</sub> =rated I <sub>D</sub> , V <sub>GS</sub> =0V, T <sub>J</sub> =25°C)	<b>V<sub>SD</sub></b>	-	1.0	1.8	<b>V</b>	
<b>Diode Reverse Recovery Time</b> <b>Reverse Recovery Charge</b>	T <sub>J</sub> =25°C I <sub>F</sub> =I <sub>D</sub> di/dt=100A/μsec	<b>t<sub>rr</sub></b> <b>Q<sub>RR</sub></b>	-	1.25 0.3	200 -	<b>nsec</b> <b>μC</b>
<b>Input Capacitance</b> <b>Output Capacitance</b> <b>Reverse Transfer Capacitance</b>	V <sub>GS</sub> =0 Volts V <sub>DS</sub> =25 Volts f=1 MHz	<b>C<sub>iss</sub></b> <b>C<sub>oss</sub></b> <b>C<sub>rss</sub></b>	- - -	4100 1200 310	- - -	<b>pF</b>

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

**NOTES:**

1/ Maximum current limited by package, die rated at 70A.