



# Solid State Devices, Inc.

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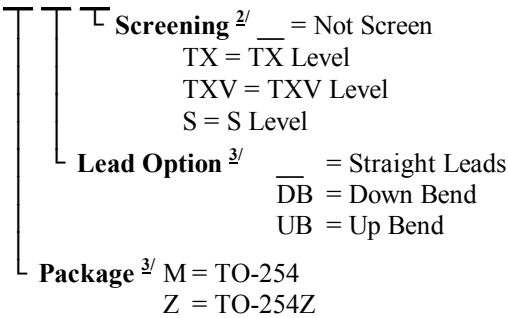
## SFF11N80 Series

### 11 AMP / 800 Volts 0.95 Ω N-Channel MOSFET

### DESIGNER'S DATA SHEET

#### Part Number / Ordering Information <sup>1/</sup>

SFF11N80

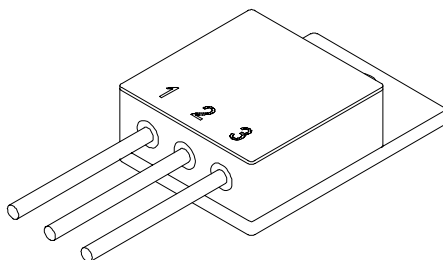


#### Features:

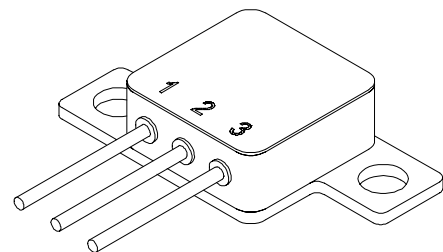
- Rugged Construction with Polysilicon Gate Cell
- Low R<sub>DS(ON)</sub> and High Transconductance
- Excellent High Temperature Stability
- Very Fast Switching Speed
- Fast Recovery and Superior dV/dt performance
- Increased Reverse Energy Capability
- Low Input and Transfer Capacitance for Easy Paralleling
- Hermetically Sealed, Isolated Package
- Ceramic Seal Package Available. Contact Factory
- TX, TXV, S-Level screening available
- Replacement for IXTH11N80 Types

Maximum Ratings	Symbol	Value	Units
Drain – Source Voltage	V <sub>DS</sub>	800	Volts
Gate – Source Voltage	V <sub>GS</sub>	±20	Volts
Continues Collector Current	I <sub>D</sub>	11	Amps
Power Dissipation	P <sub>D</sub>	T <sub>C</sub> = 25°C 150	W
		T <sub>C</sub> = 55°C 114	
Operating & Storage Temperature	Top & Tstg	-55 to +175	°C
Maximum Thermal Resistance Junction to Case	R <sub>θJC</sub>	0.83	°C/W

TO-254 (M)



TO-254Z (Z)



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

DATA SHEET #: F00213C

DOC



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**SFF11N80 Series**

Electrical Characteristics <sup>4/</sup>		Symbol	Min	Typ	Max	Units
<b>Drain to Source Breakdown Voltage</b> ( $V_{GS} = 0V, I_D = 250\mu A$ )		<b><math>BV_{DSS}</math></b>	800	—	—	Volts
<b>Drain to Source On State Resistance</b> ( $V_{GS} = 10V, I_D = 5.5A$ )		<b><math>R_{DS(on)}</math></b>	—	—	0.95	$\Omega$
<b>On State Drain Current</b> ( $V_{DS} > I_{D(on)} \times R_{DS(on)} \text{ Max}, V_{GS} = 10V$ )		<b><math>I_{D(on)}</math></b>	11	—	—	A
<b>Gate Threshold Voltage</b> ( $V_{DS} = V_{GS}, I_D = 250\mu A$ )		<b><math>V_{GS(th)}</math></b>	2.0	—	4.5	V
<b>Gate to Source Leakage</b> ( $V_{GS} = \pm 20V$ )		<b><math>I_{GSS}</math></b>	—	—	$\pm 100$	nA
<b>Zero Gate Voltage Drain Current</b> ( $V_{GS} = 0V$ )		<b><math>I_{DSS}</math></b>	$V_{DS} = 800V, T_A = 25^\circ C$	—	250	$\mu A$
			$V_{DS} = 640V, T_A = 125^\circ C$	—	1.0	mA
<b>Forward Transconductance *</b> ( $V_{DS} > I_{D(on)} \times R_{DS(on)} \text{ Max}, I_D = 5.5A$ )		<b><math>g_{fs}</math></b>	8.0	14	—	Mho
<b>Total Gate Charge</b> <b>Gate to Source Charge</b> <b>Gate to Drain Charge</b>	$V_{GS} = 10V$	<b><math>Q_g</math></b>	—	128	145	nC
	$V_{DS} = 640V$	<b><math>Q_{gs}</math></b>	—	30	55	
	$I_D = 5.5A$	<b><math>Q_{gd}</math></b>	—	55	80	
<b>Turn on Delay Time</b> <b>Rise Time</b> <b>Turn on Delay Time</b> <b>Fall Time</b>	$V_{DS} = 400V$ $I_D = 5.5A$ $R_G = 2.0\Omega$	<b><math>t_{d(on)}</math></b>	—	20	50	nsec
		<b><math>t_r</math></b>	—	33	50	
		<b><math>t_{d(off)}</math></b>	—	63	100	
		<b><math>t_f</math></b>	—	32	50	
<b>Diode Forward Voltage *</b> ( $I_F = 11A, V_{GS} = 0V$ )		<b><math>V_{SD}</math></b>	—	—	1.5	V
<b>Diode Reverse Recovery Time</b> ( $I_F = 11A, di/dt = 100A/\mu sec$ )		<b><math>t_{rr}</math></b>	—	—	550	nsec
<b>Input Capacitance</b> <b>Output Capacitance</b> <b>Reverse Transfer Capacitance</b>	$V_{GS} = 0V$	<b><math>C_{iss}</math></b>	—	4200	—	pF
	$V_{DS} = 25V$	<b><math>C_{oss}</math></b>	—	360	—	
	$f = 1MHz$	<b><math>C_{rss}</math></b>	—	100	—	

**NOTES:**

\* Pulse Test: Pulse Width = 300 $\mu$ sec, Duty Cycle = 2%

1/ For Ordering Information, Price, and Availability Contact Factory.

2/ Screening per MIL-PRF-19500

3/ For Package Outlines Contact Factory.

4/ Unless Otherwise Specified, All Electrical Characteristics @25°C.

**Available Part Numbers:**

**SFF11N80M; SFF11N80MDB; SFF11N80MUB;**  
**SFF11N80Z; SFF11N80ZDB; SFF11N80ZUB;**

**PIN ASSIGNMENT (Standard)**

Package	Drain	Source	Gate
<b>TO-254 (M)</b>	Pin 1	Pin 2	Pin 3
<b>TO-254Z (Z)</b>	Pin 1	Pin 2	Pin 3

