

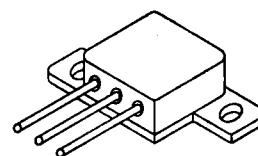
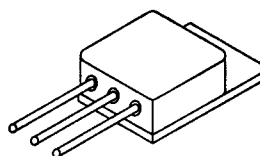


PRELIMINARY

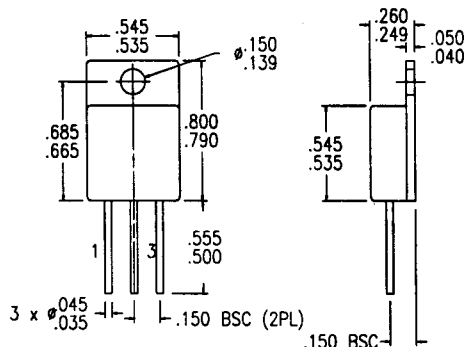
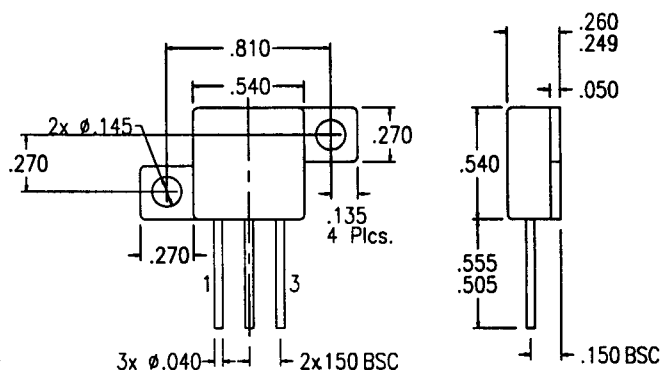
SOLID STATE DEVICES, INC

14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424**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 surface mount power package
- TX, TXV and Space Level screening available
- Replaces: IXTH24N50 Types

SFF24N50M
SFF24N50Z**24 AMP**
500 VOLTS
0.23 Ω
N-CHANNEL
POWER MOSFET**TO-254****TO-254Z****MAXIMUM RATINGS**

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	500	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current	I _D	24	Amps
Operating and Storage Temperature	T _{op} & T _{stg}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	0.83	°C/W
Total Device Dissipation @ TC=25°C	P _D	150	Watts
Total Device Dissipation @ TC=55°C		114	

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. SSDI's for these devices should be reviewed by SSDI prior to release.**DATA SHEET #: F00165 D****MED**

SFF24N50M
SFF24N50Z

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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}	500	---	---	V
Drain to Source on State Resistance ($V_{GS}=10\text{ V}$, $I_D=50\%$ Rated ID)		$R_{DS(on)}$	---	---	0.25	Ω
On State Drain Current ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $V_{GS}=10\text{ V}$)		$I_D(on)$	24	---	---	A
Gate Threshold Voltage ($V_{DS} \geq V_{GS}$, $I_D=4\text{mA}$)		$V_{GS(th)}$	2.0	---	4.0	V
Forward Transconductance ($V_{DS} > I_D(on) \times R_{DS(on)}$ Max, $I_{DS}=50\%$ rated ID)		g_{fs}	12	16	---	S(τ)
Zero Gate Voltage Drain Current ($V_{DS}=\text{max rated voltage}$, $V_{GS}=0\text{ V}$) ($V_{DS}=80\%$ rated VDS, $V_{GS}=0\text{ V}$, $T_A=125^{\circ}\text{C}$)		I_{DSS}	---	---	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS	I_{GSS}	---	---	+100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	$V_{GS}=10\text{ Volts}$ 50% rated VDS 50% Rated ID	Q_g Q_{gs} Q_{gd}	---	135 28 62	180 40 85	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	$V_{DD}=50\%$ rated VDS 50% rated ID $R_G=6.2\Omega$ $V_{GS}=10\text{V}$	$t_{d(on)}$ t_r $t_{d(off)}$ t_f	---	16 33 65 30	30 45 130 40	nsec
Diode Forward Voltage ($I_S=\text{rated ID}$, $V_{GS}=0\text{ V}$, $T_J=25^{\circ}\text{C}$)		V_{SD}	---	---	1.5	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}	---	---	500 ---	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}	---	4200 450 135	---	pF

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