



Solid State Devices, Inc.

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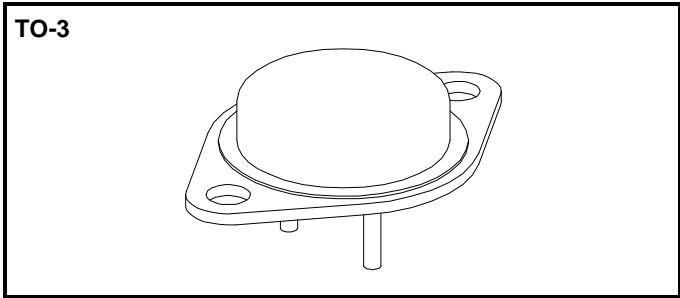
**SFF24N50/3
 SFF24N50/3T**

**24 AMP / 500 Volts
 0.2 W
 N-Channel
 Power MOSFET**

DESIGNER'S DATA SHEET

Features:

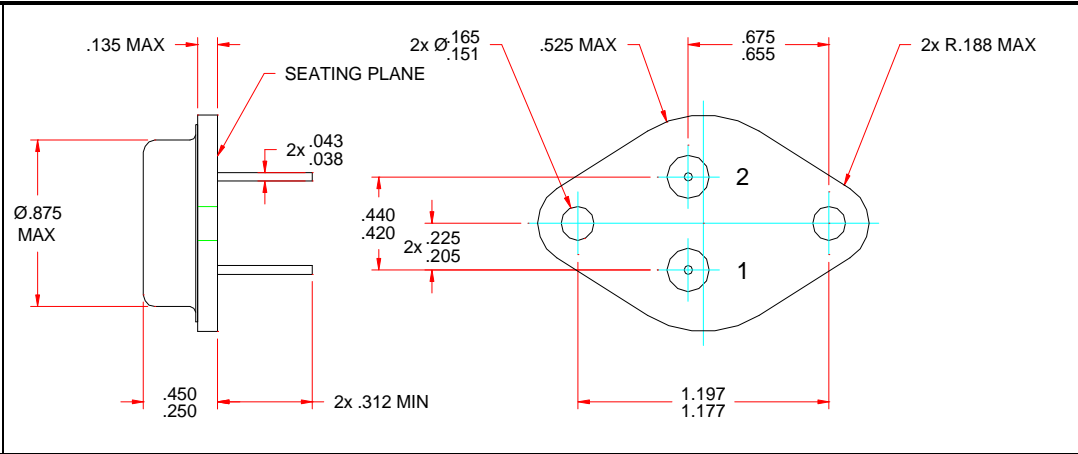
- Rugged Construction with Polysilicon Gate Cell
- Low $R_{DS(ON)}$ and High Transconductance
- Excellent High Temperature Stability
- Very Fast Switching Speed
- Fast Recovery and Superior dV/dt Performance
- Increased Reverse Energy Capability
- Low Input and Transfer Capacitance for Easy Paralleling
- Hermetically Sealed Surface Mount Power Package
- TX, TXV, Space Level Screening Available
- Replacement for IXTH24N50 Types



Maximum Ratings		Symbol	Value	Units
Drain – Source Voltage		V_{DS}	500	Volts
Gate – Source Voltage		V_{GS}	± 20	Volts
Continuous Drain Current (Tj limited)		I_D	24	Amps
Avalanche Current	Repetitive	I_{AR}	21	Amps
Avalanche Energy	Repetitive Single Pulse	E_{AR} E_{AS}	1 690	mJ
Operating & Storage Temperature		Top & Tstg	-55 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case		R_{qJC}	0.75 (typ 0.6)	$^{\circ}C/W$
Total Device Dissipation @ $TC=25^{\circ}C$		PD	167	WATTS
Total Device Dissipation @ $TC=55^{\circ}C$			126	

Package Outline: TO-3
Pin Out:
Pin 1: GATE
Pin 2: SOURCE
Pin 3: DRAIN

Notes:
 1. P/N: SFF 24N50/3:
 Pin Diameter : 0.043"
 0.038"
 2. P/N: SFF24N50/3T:
 Pin Diameter: 0.063"
 0.058"





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SFF24N50/3
SFF24N50/3T

Electrical Characteristics @ T _J = 25°C (Unless Otherwise Specified)		Symbol	Min	Typ	Max	Units
Drain to Source Breakdown Voltage (V _{GS} =0 V, I _D =250 μA)		BV _{DSS}	500	—	—	Volts
Drain to Source On State Resistance (V _{GS} =10 V, I _D =50% Rated ID)		R _{DS(on)}	—	—	0.2	W
On State Drain Current (V _{DS} >I _{D(on)} X R _{DS(on)} Max, V _{GS} =10V)		I _{D(on)}	24	—	—	A
Gate Threshold Voltage (V _{DS} =V _{GS} , I _D = 4mA)		V _{GS(th)}	2.0	—	4.0	V
Forward Transconductance (V _{DS} >I _{D(on)} X R _{DS(on)} Max, I _{DS} = 50% Rated ID)		g _{fs}	8	12	—	mho
Zero Gate Voltage Drain Current (V _{DS} =max rated voltage, V _{GS} =0 V) (V _{DS} =80% rated V _{DS} , V _{GS} =0 V, T _A =125°C)		I _{DSS}	—	—	250 1000	mA
Gate to Source Leakage Forward	At rated V _{GS}	I _{GSS}	—	—	+100	nA
Gate to Source Leakage Reverse			—	—	-100	
Total Gate Charge	V _{GS} =10 Volts 50% rated V _{DS} 50% Rated ID	Q _g	—	135	180	nC
Gate to Source Charge		Q _{gs}	—	28	40	
Gate to Drain Charge		Q _{gd}	—	62	85	
Turn on Delay Time	V _{DD} =50% Rated V _{DS} 50% Rated I _D R _G = 6.2Ω V _{GS} =10 Volts	t _{d(on)}	—	16	30	nsec
Rise Time		t _r	—	33	45	
Turn on Delay Time		t _{d(off)}	—	65	130	
Fall Time		t _f	—	30	40	
Diode Forward Voltage (I _S = Rated I _D , V _{GS} =0 V, T _J =25°C)		V _{SD}	—	—	1.5	V
Diode Reverse Recovery Time	T _J =25°C I _F =10A Di/dt=100A/μsec	t _{rr}	—	—	500	nsec
Reverse Recovery Charge		Q _{RR}	—	—	—	nC
Input Capacitance	V _{GS} =0 Volts V _{DS} =25 Volts f=1 MHz	C _{iss}	—	4200	—	pF
Input Capacitance		C _{oss}	—	450	—	
Reverse Transfer Capacitance		C _{rss}	—	135	—	

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

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

DATA SHEET #: F00175E

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