



PRELIMINARY

SOLID STATE DEVICES, INC

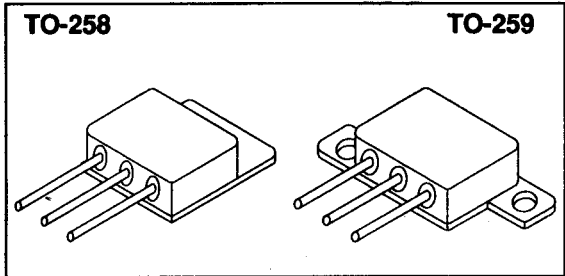
14849 Firestone Boulevard · La Mirada, CA 90638
Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

SFF40N30N
SFF40N30P

Designer's Data Sheet

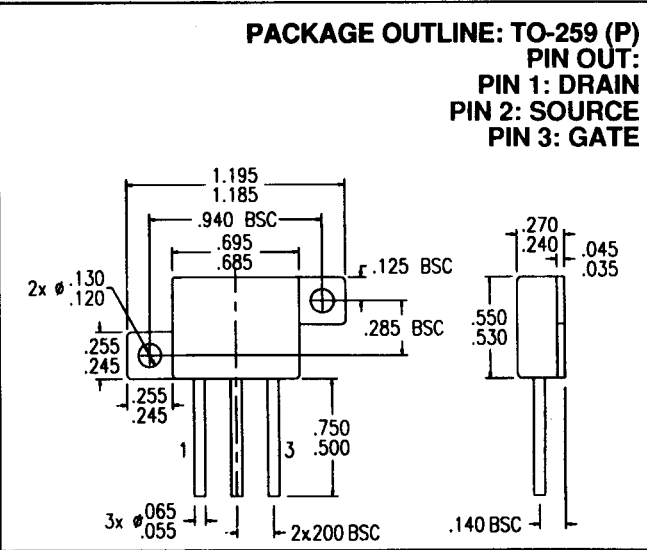
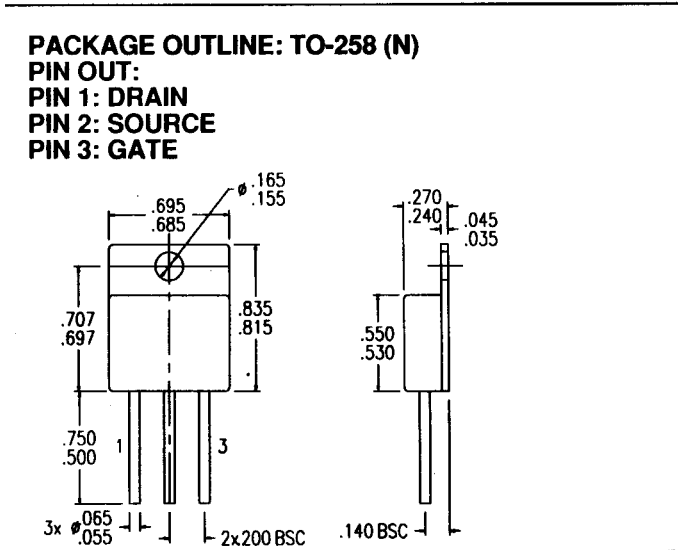
- FEATURES:**
- Rugged construction with polysilicon gate
 - Low RDS(on) and high transconductance
 - Excellent high temperature stability
 - Very fast switching speed
 - Fast recovery and superior dv/dt performance
 - Increased reverse energy capability
 - Low input and transfer capacitance for easy paralleling
 - Ceramic Seals for improved hermeticity
 - Hermetically sealed package
 - TX, TXV and Space Level screening available
 - Replaces: IXTH40N30 Types

40 AMP
300 VOLTS
0.10 Ω
N-CHANNEL
POWER MOSFET



MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	300	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current	I _D	40	Amps
Operating and Storage Temperature	Top & Tstg	-55 to +150	°C
Thermal Resistance, Junction to Case	RθJC	0.83	°C/W
Total Device Dissipation @ TC=25°C	P _D	150	Watts
Total Device Dissipation @ TC=55°C		114	



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

DATA SHEET #: F00145 B **MED**

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ELECTRICAL CHARACTERISTICS @ T_J=25 °C (Unless Otherwise Specified)

RATING		SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (VGS=0 V, ID=250μA)		BVDSS	300	---	---	V
Drain to Source on State Resistance (VGS=10 V, ID=50% Rated ID)		RDS(on)	---	---	0.10	Ω
On State Drain Current (VDS > ID(on) X RDS(on) Max, VGS=10 V)		ID(on)	40	---	---	A
Gate Threshold Voltage (VDS ≥ VGS, ID=4mA)		VGS(th)	2.0	---	4.0	V
Forward Transconductance (VDS > ID(on) X RDS(on) Max, ID=50% rated ID)		gfs	22	25	---	S(τ)
Zero Gate Voltage Drain Current (VDS=max rated voltage, VGS=0 V) (VDS=80% rated VDS, VGS=0 V, TA=125°C)		IDSS	---	---	250 1000	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	At rated VGS	IGSS	---	---	+100 -100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	VGS=10 Volts 50% rated VDS 50% Rated ID	Qg Qgs Qgd	---	177 28 78	200 50 105	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	VDD=50% rated VDS 50% rated ID RG= 2.0 Ω VGS=10V	td(on) tr td(off) tf	---	30 60 175 45	50 90 250 90	nsec
Diode Forward Voltage (IS=rated ID, VGS=0 V, T _J =25°C)		VSD	---	---	1.5	V
Diode Reverse Recovery Time Reverse Recovery Charge	T _J =25°C IF=rated ID di/dt=100 A/μsec	trr QRR	---	---	325 ---	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	VGS=0 Volts VDS=25 Volts f= 1 MHz	Ciss Coss Crss	---	4800 745 283	---	pF

SAFE OPERATING AREA (S.O.A.)
TC = 25 °C, D.C. CONDITION

