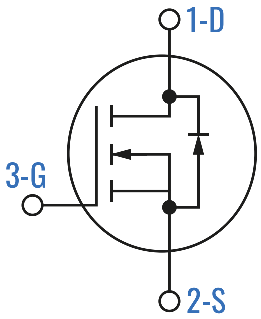
SMF459

1000V N-Channel Power MOSFET - 1

KEY FEATURES

- I_D 6A
- $R_{DS(on)}$ 2Ω
- FAST RECOVERY DIODE
- AVALANCHE RATED
- TO-254 HERMETIC PACKAGE
- BACKSIDE ISOLATION
- JANTX, JANTXV SCREENING AVAILABLE



V_{DS} = 1000V
I_D @ 25°C = 5A
$R_{DS(on)}$ = 2Ω

ORDERING GUIDE

Part Number	SMF459
Description	1000V N-Channel Power MOSFET

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

PARAMETER	SYMBOL	VALUE	TEST CONDITIONS
Drain-Source Voltage	V_{DSmax}	1000V	V_{GS} = 0V, I_D = 250μA
Gate-Source Voltage	V_{GSS}	±20V	Continuous
Drain Current, continous	I_{D25}	6A	T_C = 25°C
Drain Current, pulsed	$I_{D(PULSE)}$	24A	Pulse width T_p limited by T_{Jmax}
Power Dissipation	P_D	190W	T_C = 25°C
Junction Temperature Range, Operating Junction Temperature Range, Storage	T_J T_{STG}	-55°C to 150°C	

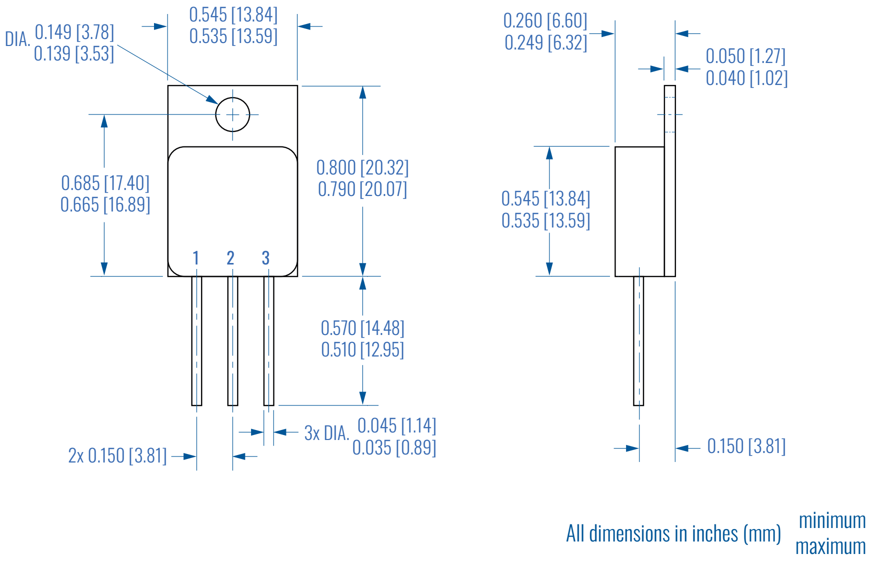
ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage	V_{GS} = 0V, I_D = 250µA	$V_{(BR)DSS}$	1000			V
Gate Threshold Voltage	V_{DS} = V_{GS}, I_D = 250µA	$V_{GS(th)}$	2.0		4.0	V
Off -State Drain Current	V_{DS} = 1000V, V_{GS} = 0V	I_{DSS}			100	µA
	V_{DS} = 800V, V_{GS} = 0V, T_A = 125°C				500	µA
Gate-Source Leakage Current	V_{GS} = ±20V, V_{DS} = 0V	I_{GSS}			±100	nA
Drain-Source On-state Resistance	V_{GS} = 10V, I_D = 6A	$R_{DS(on)}$			2	Ω
Transconductance	V_{DS} = 10V, I_D = 6A	G_{fs}	5.4			S
Total Gate Charge Gate to Source Charge Gate to Drain Charge	V_{GS} = 10V, V_{DS} = 400V, I_D = 6A, I_{GS} = 1.5mA	$Q_{g(on)}$ Q_{gs} Q_{gd}		130 23 70		nC
Turn On Delay Time Rise Time Turn Off Delay Time Fall Time	V_{DD} = 400V, I_D = 6A, R_G = 6.2Ω	$t_{d(on)}$ t_r $t_{d(off)}$ t_f		20 35 130 36		ns
Thermal Resistance		R_{thJC}		0.33	0.5	°C/W

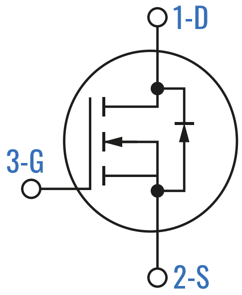
BODY DIODE CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Parameter		Symbol	Min.	Typ.	Max.	Unit
Body Diode Forward Voltage	I_S = 10A, V_{GS} = 0V	V_{SD}		1.2	1.8	V

OUTLINE DIMENSION



SCHEMATIC



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