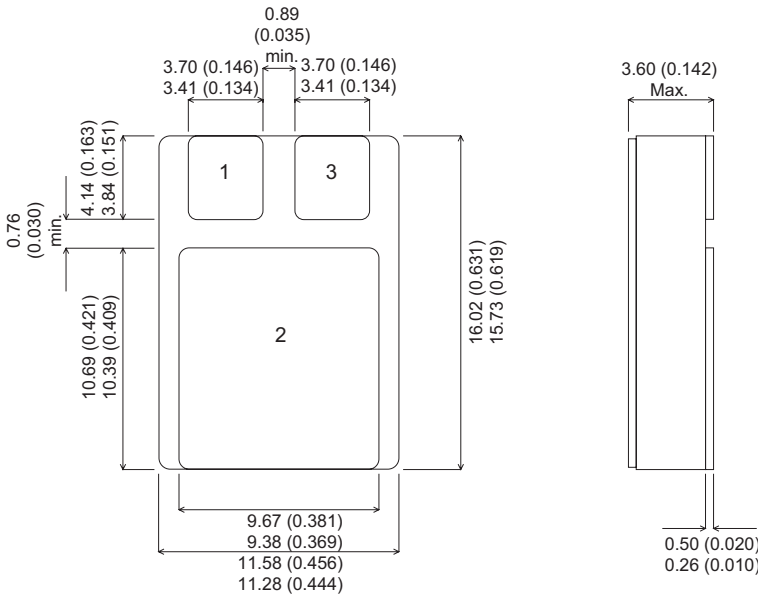


MECHANICAL DATA

Dimensions in mm (inches)



**P-CHANNEL
POWER MOSFET**

V_{DSS} -60V
I_{D(cont)} -55A
R_{DS(on)} 0.026Ω

FEATURES

- HERMETICALLY SEALED SMD1 CERAMIC PACKAGE
- SIMPLE DRIVE REQUIREMENTS
- SCREENING OPTIONS AVAILABLE

SMD1 (TO276-AB) Ceramic Package

PAD 1 – Source PAD 2 – Drain PAD 3 – Gate

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V _{DSS}	Drain – Source Voltage	-60V
I _D	Continuous Drain Current (V _{GS} = 0 , T _{case} = 25°C)	-55A
I _D	Continuous Drain Current (V _{GS} = 0 , T _{case} = 100°C)	-38.9A
I _{DM}	Pulsed Drain Current ¹	-220A
P _D	Power Dissipation @ T _{case} = 25°C	125W
	Linear Derating Factor	1.2W/°C
E _{AS}	Single Pulse Avalanche Energy ²	820mJ
I _{AR}	Avalanche Current ¹	-55A
E _{AR}	Repetitive Avalanche Energy ¹	21.4mJ
dv/dt	Peak Diode Recovery ³	-7.0V/ns
T _J , T _{stg}	Operating and Storage Temperature Range	-55 to +175°C
T _L	Lead Temperature 1.6mm (0.63”) from case for 10 sec.	300°C

Notes

- 1) Repetitive Rating – Pulse width limited by maximum junction temperature.
- 2) @ V_{DD} = -25V , L = 0.315mH , R_G = 25Ω , I_{AS} = -55A , Starting T_J = 25°C
- 3) @ I_{SD} ≤ -47A , di/dt ≤ -300A/μs , V_{DD} ≤ BV_{DSS} , T_J ≤ 25°C

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ELECTRICAL CHARACTERISTICS ($T_{\text{case}} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS					
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{\text{GS}} = 0$ $I_{\text{D}} = -250\mu\text{A}$	-60		V
$\frac{\Delta BV_{\text{DSS}}}{\Delta T_{\text{J}}}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_{\text{D}} = -250\mu\text{A}$		-0.06	$\text{V}/^{\circ}\text{C}$
$R_{\text{DS(on)}}$	Static Drain – Source On–State Resistance ¹	$V_{\text{GS}} = -10\text{V}$ $I_{\text{D}} = -27.5\text{A}$		0.021 0.026	Ω
$V_{\text{GS(th)}}$	Gate Threshold Voltage	$V_{\text{DS}} = V_{\text{GS}}$ $I_{\text{D}} = -250\mu\text{A}$	-2		V
g_{fs}	Forward Transconductance ¹	$V_{\text{DS}} = -30\text{V}$ $I_{\text{DS}} = -27.5\text{A}$		22	S
I_{DSS}	Zero Gate Voltage Drain Current ($V_{\text{GS}} = 0$)	$V_{\text{DS}} = -60\text{V}$		-1	μA
		$V_{\text{DS}} = -48\text{V}$ $T_{\text{C}} = 125^{\circ}\text{C}$		-10	
I_{GSS}	Forward Gate – Source Leakage	$V_{\text{GS}} = -25\text{V}$		-100	nA
I_{GSS}	Reverse Gate – Source Leakage	$V_{\text{GS}} = 25\text{V}$		100	
DYNAMIC CHARACTERISTICS					
C_{iss}	Input Capacitance	$V_{\text{GS}} = 0$		2800	pF
C_{oss}	Output Capacitance	$V_{\text{DS}} = -25\text{V}$		1300	
C_{riss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		320	
Q_{g}	Total Gate Charge	$V_{\text{GS}} = -10\text{V}$		84	nC
Q_{gs}	Gate – Source Charge	$I_{\text{D}} = -47\text{A}$		18	
Q_{gd}	Gate – Drain (“Miller”) Charge	$V_{\text{DS}} = -48\text{V}$		44	
$t_{\text{d(on)}}$	Turn–On Delay Time	$V_{\text{DD}} = -30\text{V}$ $I_{\text{D}} = -23.5\text{A}$ $R_{\text{G}} = 25\Omega$		50	ns
t_{r}	Rise Time			450	
$t_{\text{d(off)}}$	Turn–Off Delay Time			100	
t_{f}	Fall Time			195	
SOURCE – DRAIN DIODE CHARACTERISTICS					
I_{S}	Continuous Source Current			-55A	A
I_{SM}	Pulse Source Current ²			-220A	
V_{SD}	Diode Forward Voltage	$I_{\text{S}} = -55\text{A}$ $V_{\text{GS}} = 0$		-4.0	V
t_{rr}	Reverse Recovery Time	$V_{\text{GS}} = 0$		130	ns
Q_{rr}	Reverse Recovery Charge	$I_{\text{F}} = -47\text{A}$ $di/dt = 100\text{A}/\mu\text{s}$		0.55	μC

- Notes**
- 1) Pulse Test: Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$
 - 2) Repetitive Rating – Pulse width limited by maximum junction temperature.