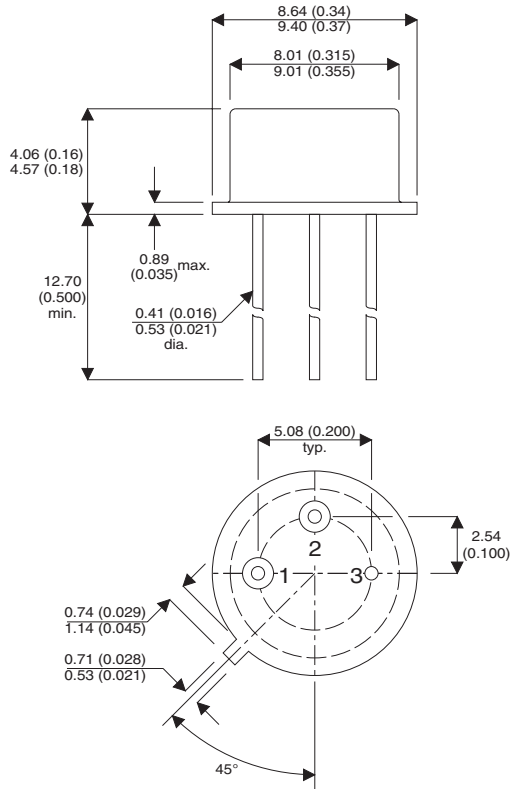


MECHANICAL DATA

Dimensions in mm (inches)



**P-CHANNEL
ENHANCEMENT MODE
HIGH VOLTAGE
POWER MOSFETS**

V_{DSS} -100V
 $I_{D(cont)}$ -4.0A
 $R_{DS(on)}$ 0.60Ω

FEATURES

- HERMETICALLY SEALED TO-39 METAL PACKAGE
- SIMPLE DRIVE REQUIREMENTS
- LIGHTWEIGHT
- SCREENING OPTIONS AVAILABLE

TO-39 (TO-205AF) METAL PACKAGE

PIN1 – Source PIN 2 – Gate PIN 3 – Drain

ABSOLUTE MAXIMUM RATINGS ($T_{case} = 25^{\circ}C$ unless otherwise stated)


V_{GS}	Gate – Source Voltage	$\pm 20V$
I_D	Continuous Drain Current ($V_{GS} = 0, T_{case} = 25^{\circ}C$)	-4.0A
I_D	Continuous Drain Current ($V_{GS} = 0, T_{case} = 100^{\circ}C$)	-2.6A
I_{DM}	Pulsed Drain Current ¹	-16A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	20 W
	Linear Derating Factor	0.16 W/ $^{\circ}C$
T_J, T_{stg}	Operating and Storage Temperature Range	-55 to 150 $^{\circ}C$
T_L	Package Mounting Surface Temperature (for 5 sec)	300 $^{\circ}C$
$R_{\theta JC}$	Thermal Resistance Junction to Case	6.25 $^{\circ}C/W$

Notes

1) Repetitive Rating – Pulse width limited by maximum junction temperature.

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS					
BV_{DSS} Drain – Source Breakdown Voltage	$V_{GS} = 0$ $I_D = -1\text{mA}$	- 100			V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$ Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = -1\text{mA}$		- 0.10		$\text{V}/^{\circ}\text{C}$
$R_{DS(on)}$ Static Drain – Source On–State Resistance ¹	$V_{GS} = -10\text{V}$ $I_D = -2.6\text{A}$			0.60	Ω
	$V_{GS} = -10\text{V}$ $I_D = -4.0\text{A}$			0.69	
$V_{GS(th)}$ Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = -250\mu\text{A}$	- 2		- 4	V
g_{fs} Forward Transconductance ¹	$V_{DS} > -15\text{V}$ $I_D = -2.6\text{A}$	1.25			S
I_{DSS} Drain-to-Source Leakage Current	$V_{DS} = -80\text{V}$ $V_{GS} = 0$ $T_J = 125^{\circ}\text{C}$			-25	μA
				-250	
I_{GSS} Forward Gate – Source Leakage	$V_{GS} = 20\text{V}$			100	nA
I_{GSS} Reverse Gate – Source Leakage	$V_{GS} = -20\text{V}$			-100	
DYNAMIC CHARACTERISTICS					
C_{iss} Input Capacitance	$V_{GS} = 0$ $V_{DS} = -25\text{V}$ $f = 1\text{MHz}$		380		pF
C_{oss} Output Capacitance			170		
C_{rss} Reverse Transfer Capacitance			45		
Q_g Total Gate Charge	$V_{GS} = -10\text{V}$ $I_D = -4.0\text{A}$ $V_{DS} = -50\text{V}$	4.3		16.3	nC
Q_{gs} Gate – Source Charge		1.3		4.7	
Q_{gd} Gate – Drain (“Miller”) Charge		1.0		9.0	
$t_{d(on)}$ Turn–On Delay Time	$V_{DD} = -50\text{V}$ $I_D = -4.0\text{A}$ $R_G = 7.5\Omega$			60	ns
t_r Rise Time				100	
$t_{d(off)}$ Turn–Off Delay Time				50	
t_f Fall Time				70	
SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S Continuous Source Current	MOSFET symbol showing the integral reverse p-n junction diode 			- 4.0	A
I_{SM} Pulse Source Current				- 16	
V_{SD} Diode Forward Voltage ¹	$I_S = -4.0\text{A}$ $T_J = 25^{\circ}\text{C}$ $V_{GS} = 0\text{V}$			- 4.8	V
t_{rr} Reverse Recovery Time ¹	$I_F = -4.0\text{A}$ $T_J = 25^{\circ}\text{C}$			200	ns
Q_{rr} Reverse Recovery Charge ¹	$d_i / d_t \leq -100\text{A}/\mu\text{s}$ $V_{DD} \leq -50\text{V}$			3.1	μC
t_{on} Forward Turn–On Time			Negligible		

Notes

1) Pulse Test: Pulse Width $\leq 300\text{ms}$, $\delta \leq 2\%$

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