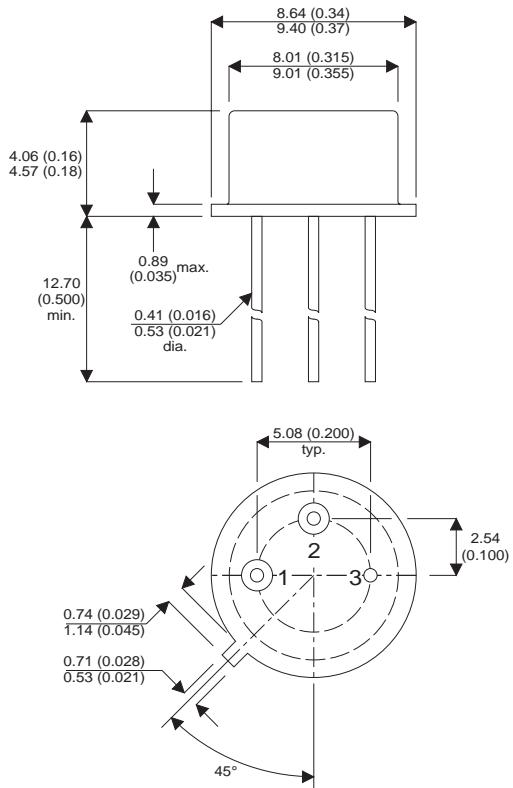


## MECHANICAL DATA

Dimensions in mm (inches)



### TO-39 (TO-205AF) METAL PACKAGE

PIN1 – Source

PIN 2 – Gate

PIN 3 – Drain

## N-CHANNEL ENHANCEMENT MODE HIGH VOLTAGE POWER MOSFETS

<b>V<sub>DSS</sub></b>	<b>-100V</b>
<b>I<sub>D</sub>(cont)</b>	<b>-4.0A</b>
<b>R<sub>DS(on)</sub></b>	<b>0.60Ω</b>

## FEATURES

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

## ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C unless otherwise stated)

V <sub>GS</sub>	Gate – Source Voltage	±20V
I <sub>D</sub>	Continuous Drain Current (V <sub>GS</sub> = 0 , T <sub>case</sub> = 25°C)	-4.0A
I <sub>D</sub>	Continuous Drain Current (V <sub>GS</sub> = 0 , T <sub>case</sub> = 100°C)	-2.6A
I <sub>DM</sub>	Pulsed Drain Current <sup>1</sup>	-16A
P <sub>D</sub>	Power Dissipation @ T <sub>case</sub> = 25°C	20 W
	Linear Derating Factor	0.16 W/°C
T <sub>J</sub> , T <sub>stg</sub>	Operating and Storage Temperature Range	-55 to 150°C
T <sub>L</sub>	Package Mounting Surface Temperature (for 5 sec)	300°C
R <sub>θJC</sub>	Thermal Resistance Junction to Case	6.25°C/W

### Notes

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

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Document Number 5748  
Issue 1

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

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

**Notes**

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

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