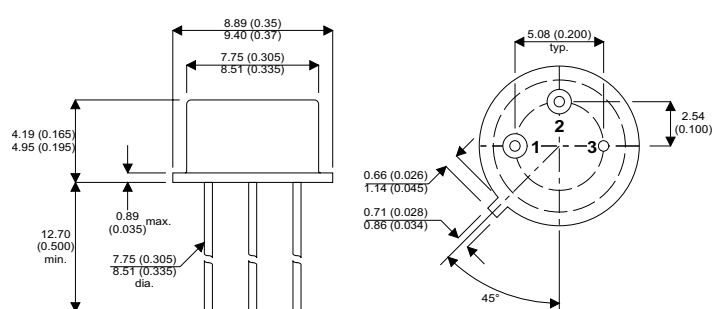


**MECHANICAL DATA**

Dimensions in mm (inches)


**TO-39 METAL PACKAGE**
**Underside View**

Pin 1 = Emitter    Pin 2 = Base    Pin 3 = Collector

**P-CHANNEL  
POWER MOSFETs**

$V_{DSS}$         - 100V  
 $I_{D(cont)}$      - 6.5A  
 $R_{DS(on)}$      0.30Ω


**FEATURES**

- Single pulse avalanche energy rated
- SOA is power dissipation limited
- Nanosecond switching speeds
- Linear transfer characteristics
- High input impedance

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

$V_{GS}$	Gate – Source Voltage*	±20V
$V_{DS}$	Drain – Source Voltage*	-100V
$V_{DG}$	Drain – Gate Voltage ( $R_{GS} = 20k\Omega$ )*	-100V
$I_D$	Continuous Drain Current @ $T_C = 25^{\circ}C$ *	-6.5A
	@ $T_C = 100^{\circ}C$ *	-4.1A
$I_{DM}$	Pulsed Drain Current <sup>2</sup> *	-25A
$E_{AS}$	Single Pulse Avalanche Current <sup>3</sup>	500mJ
$P_D$	Power Dissipation @ $T_C = 25^{\circ}C$ *	25W
	Linear Derating Factor*	0.2W/°C
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range*	-55 to +150°C
$R_{\theta JC}$	Thermal Resistance Junction to Case*	5°C/W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	175°C/W

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit		
<b>STATIC ELECTRICAL RATINGS</b>							
$BV_{DSS}$	Drain – Source Breakdown Voltage*	$V_{GS} = 0$	$I_D = 250\mu A$	-100	V		
$R_{DS(on)}$	Static Drain – Source On–State Resistance <sup>1</sup>	$V_{GS} = -10V$	$I_D = -4.1A$		0.30*	$\Omega$	
$V_{GS(th)}$	Gate Threshold Voltage*	$V_{DS} = V_{GS}$	$I_D = -0.25mA$	-2	-4	V	
$I_{GSS}$	Forward Gate – Source Leakage	$V_{GS} = -20V$			-100	nA	
$I_{GSS}$	Reverse Gate – Source Leakage	$V_{GS} = 20V$			100		
$I_{DSS}$	Zero Gate Voltage Drain Current*	$V_{DS} = \text{Max rating} \times 0.8$			-250	$\mu A$	
		$V_{GS} = 0V$	$T_C = -125^{\circ}C$		-1000		
$V_{DS(on)}$	On-State Drain Voltage <sup>1</sup>	$V_{DS} \geq I_{D(on)}R_{DS(on)max.}$			-2.1	V	
$g_{fs}$	Forward Transconductance <sup>1</sup>	$V_{DS} = -5V$	$I_D = -4.1A$	2.5	3.5	7.5	(S $\cup$ )
$C_{iss}$	Input Capacitance	$V_{GS} = 0V$ $V_{DS} = -25V$ $f = 1.0 \text{ MHz}$			500		pF
$C_{oss}$	Output Capacitance				300		
$C_{riss}$	Reverse Transfer Capacitance				100		
$Q_g$	Total Gate Charge	$V_{GS} = -15V$ $I_D = -15A$ $V_{DS} = 0.8V \text{ Max Rating}$			25	45	nC
$Q_{gs}$	Gate – Source Charge				13	23	
$Q_{gd}$	Gate – Drain (“Miller”) Charge				12	22	
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = -42V$ $I_D = -4.1A$ $Z_o = 50\Omega$			30	60	ns
$t_r$	Rise Time				70	140	
$t_{d(off)}$	Turn–Off Delay Time				70	140	
$t_f$	Fall Time				70	140	
<b>SOURCE – DRAIN DIODE CHARACTERISTICS</b>							
$I_S$	Continuous Source Current*	Modified MOSFET Symbol showing the integral reverse P-N Junction rectifier. 			-6.5	A	
$I_{SM}$	Pulse Source Current [(Body Diode) <sup>2</sup> ]				-25		
$V_{SD}$	Diode Forward Voltage <sup>1</sup>	$V_{GS} = 0$	$I_S = 6.5A$	$T_J = 25^{\circ}C$		4	V
$t_{rr}$	Reverse Recovery Time	$I_F = -6.5A$		$T_J = 25^{\circ}C$		250	ns
$Q_{rr}$	Reverse Recovery Charge	$di_F/dt = 100 \text{ A}/\mu s$			1.8		$\mu C$
$t_{on}$	Forward Turn–On Time				negligible		—

\*JEDEC Registered Value

1 Pulse Test: Pulse Width  $\leq 300\mu s$ , duty cycle  $\leq 2\%$

2 Repetitive Rating: Pulse width limited by max. junction temperature

3  $V_{DD} = 25V$  starting  $T_J = 25^{\circ}C$ ,  $L = 17.25mH$ ,  $R_G = 25\Omega$ , Peak  $I_L = 6.5A$