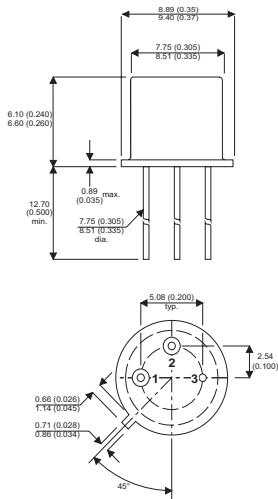


**MECHANICAL DATA**

Dimensions in mm (inches)



**N-CHANNEL ENHANCEMENT  
MODE TRANSISTOR**

**FEATURES**

- $V_{(BR)DSS} = 200V$
- $I_D = 5.5A$
- $R_{DS(ON)} = 0.40\Omega$

**TO-39 METAL PACKAGE**

**Underside View**

PIN 1 – Source      PIN 2 – Gate      PIN 3 – Drain

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

$V_{DS}$	Drain–Source Voltage	200V
$V_{GS}$	Gate–Source Voltage	$\pm 20V$
$I_D$	Drain Current Continuous $T_C = 25^\circ C$ $T_C = 100^\circ C$	5.5A 3.5A
$I_{DM}$	Drain Current Pulsed	22A
$I_A$	Avalanche Current	3.1A
$P_D$	Total Device Dissipation @ $T_C = 25^\circ C$ $T_C = 100^\circ C$	25W 10W
$T_J, T_{STG}$	Operating and Storage Junction Temperature Range	$-55$ to $+150^\circ C$
<b>THERMAL CHARACTERISTICS</b>		
$R_{\theta JC}$	Thermal Resistance Junction to Case	$5.0^\circ C/W$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	$175^\circ C/W$
$T_L$	Maximum Lead Temperature 1.5mm from Case for 10 secs.	$300^\circ C$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit		
$V_{(BR)DSS}$	Drain–Source Breakdown Voltage	$V_{GS} = 0$	$I_D = 1000\mu\text{A}$	200		V	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}$	$I_D = 250\mu\text{A}$	2.0	4.0		
$I_{GSS}$	Gate–Body Leakage	$V_{DS} = 0$	$V_{GS} = \pm 20\text{V}$		100	nA	
$I_{D(on)}$	On-State Drain Current <sup>1</sup>	$V_{DS} = 2.2$	$V_{GS} = 10\text{V}$	5.5		A	
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = 0.8 \times V_{(BR)DSS}$			25	$\mu\text{A}$	
		$V_{GS} = 0$	$T_J = 125^\circ\text{C}$		250		
$r_{DS(on)}$	Drain–Source On–Resistance <sup>1</sup>	$V_{GS} = 10\text{V}$	$I_D = 3.5\text{A}$		0.25	4.0	$\Omega$
$g_{fS}$	Forward Transconductance <sup>1</sup>	$V_{DS} = 5\text{V}$	$I_D = 3.5\text{A}$	2.5	3.0		$\text{s}(\overline{\circ})$
$C_{iss}$	Input Capacitance	$V_{DS} = 25\text{V}$	$V_{GS} = 0$		600		pF
$C_{oss}$	Output capacitance				250		
$C_{rSS}$	Reverse Transfer Capacitance			$f = 1.0\text{MHz}$	80		
$t_{don}$	Turn–On Delay Time	$V_{DD} = 77\text{V}$	$R_L = 22\Omega$		8	30	ns
$t_r$	RiseTime	$I_D = 3.5\text{A}$	$V_{GEN} = 10\text{V}$		42	50	
$t_{d(of)}$	Turn off Delay Time		$R_G = 7.5 \text{ ohms}$		12	50	
$t_f$	FallTime				30	40	
<b>SOURCE DRAIN DIODE RATING CHARACTERISTICS</b>							
$V_{SD}$	Diode Forward Voltage <sup>1</sup>	$I_F = I_S$	$V_{GS} = 0$			1.4	V
$I_S$	Continues Current					5.5	A
$I_{SM}$	Pulsed Current <sup>2</sup>					22	
$t_{rr}$	Reverse Recovery Time	$I_F = I_S$			150	500	ns
$Q_{rr}$	Reverse Recovered Charge	$di_F/dT = 100\text{A}/\mu\text{S}$				6	$\mu\text{C}$

- 1) Pulse test : Pulse Width < 300 $\mu\text{s}$  ,Duty Cycle < 2%
- 2) Pulse width limited by maximum junction temperature