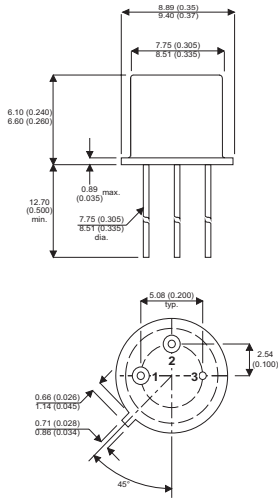


**MECHANICAL DATA**

Dimensions in mm (inches)



**TMOS FET TRANSISTOR  
N – CHANNEL**

**FEATURES**

- $V_{DSS} = 100V$
- $I_D = 8A$
- $R_{DS(ON)} = 0.18\Omega$

**TO-39 METAL PACKAGE**

**Underside View**

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

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

$V_{DSS}$	Drain–Source Voltage	100V
$V_{DGR}$	Drain–Gate Voltage ( $R_{GS} = 1.0m\Omega$ )	100V
$V_{GS}$	Gate–Source Voltage	$\pm 20V$
$I_D$	Drain Current Continuous	8.0A
$I_{DM}$	Drain Current Pulsed	32A
$P_D$	Total Device Dissipation @ $T_C = 25^\circ C$	25W
	Derate above $25^\circ C$	0.2W/ $^\circ C W$
$T_J, T_{STG}$	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 s	$300^\circ C$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
<b>OFF CHARACTERISTICS</b>						
$V_{(BR)DSS}$	Drain–Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 0.25\text{mA}$	100		V	
$I_{DSS}$	Zero Gate Voltage Drain Current	$V_{DS} = \text{Rated } V_{DSS}$ $V_{GS} = 0$		250	$\mu\text{A}$	
		$V_{DS} = 80\text{V}$ $V_{GS} = 0$ $T_J = 125^\circ\text{C}$		1000		
$I_{GSSF}$	Gate–Body Leakage Current, Forward	$V_{DS} = 0$ $V_{GS} = 20\text{V}$		100	nA	
$I_{GSSR}$	Gate–Body Leakage Current, Reverse	$V_{DS} = 0$ $V_{GS} = -20\text{V}$		-100		
<b>ON CHARACTERISTICS</b>						
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 0.5\text{mA}$	2.0		4.0 V	
$r_{DS(on)}$	Static Drain–Source On–Resistance	$V_{GS} = 10\text{V}$ $I_D = 5.0\text{A}$		0.18	$\Omega$	
		$T_A = 125^\circ\text{C}$		0.35		
$V_{DS(on)}$	Drain–Source On–Voltage	$V_{GS} = 10\text{V}$ $I_D = 8.0\text{A}$		1.56	V	
$g_{fs}$	Forward Transconductance	$V_{GS} = 15\text{V}$ $I_D = 5.0\text{A}$	3.0	9.0.	mhos	
<b>DYNAMIC CHARACTERISTICS</b>						
$C_{iss}$	Input Capacitance	$V_{DS} = 25\text{V}$ $V_{GS} = 0$ $f = 1.0\text{MHz}$	350		900	$\mu\text{F}$
$C_{oss}$	Output capacitance		150		500	
$C_{rss}$	Reverse Transfer Capacitance		50		150	
<b>SWITCHING CHARACTERISTICS</b>						
$t_{on}$	Turn–On Time	$V_{DD} = 30\text{V}$ $I_D = 5.0\text{A}$ $R_{gen} = 50\text{ ohms}$			30	ns
$t_{off}$	Turn–Off Time				75	
$t_r$	RiseTime				40	
$t_f$	FallTime				45	
<b>SOURCE DRAIN DIODE CHARACTERISTICS*</b>						
$V_{SD}$	Diode Forward Voltage	$I_S = \text{Rated } I_{D(on)}$ $V_{GS} = 0$	0.75		1.5	V
$t_{on}$	Forward turn-On Time				Negligible	ns
$t_{rr}$	Reverse Recovery Time				300	

1) Pulse test : Pulse Width < 300 $\mu\text{s}$  ,Duty Cycle < 2%

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