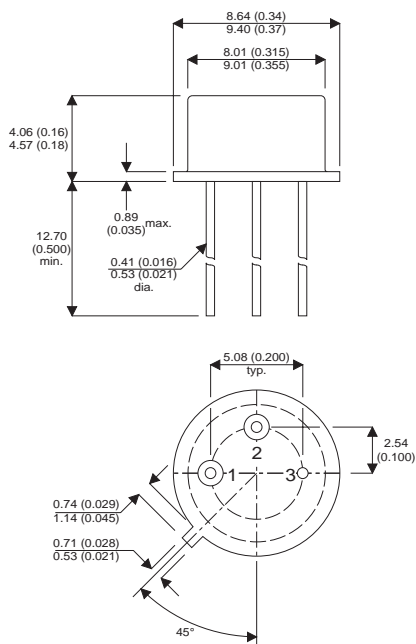


MECHANICAL DATA

Dimensions in mm (inches)



TO-39 PACKAGE (TO-205AF)

Underside View

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

**TMOS FET
ENHANCEMENT
N - CHANNEL**

FEATURES

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

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

V_{DS}	Drain-Source Voltage	100V
V_{DGR}	Drain-Source Voltage ($R_{GS} = 1.0 \text{ m}\Omega$)	100V
V_{GS}	Gate-Source Voltage	$\pm 20V$
I_D	Drain Current Continuous $T_{Case} = 25^\circ C$	8.0A
I_{DM}	Drain Current Pulsed	32A
P_D	Total Device Dissipation @ $T_{Case} = 25^\circ C$	25W
	Derate above $25^\circ C$	$0.2W/^\circ C$
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to $+150^\circ C$
THERMAL CHARACTERISTICS		
$R_{\theta JC}$	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 1.6mm from Case for 10 secs.	$300^\circ C$

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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 $V_{GS} = 0$ $I_D = 0.25\text{mA}$	100			V
$V_{GS(th)}$	Gate Threshold Voltage ¹ $V_{DS}=V_{GS}$ $I_D = 0.5\text{mA}$	2.0		4.0	
I_{GSS}	Gate–Body Leakage $V_{DS} = 0$ $V_{GS} = \pm 20\text{V}$			± 100	nA
I_{DSS}	Zero Gate Voltage Drain Current $V_{DS} = \text{Rated } V_{DSS}$ $V_{GS} = 0\text{V}$			250	μA
		$T_J = 125^\circ\text{C}$		1000	
$r_{DS(on)}$	Drain–Source On–Resistance ¹ $V_{GS} = 10\text{V}$ $I_D = 5.0\text{A}$			0.18	Ω
		$T_A = 125^\circ\text{C}$		0.35	
$V_{DS(on)}$	Drain–Source On–Voltage ¹ $V_{GS} = 10\text{V}$ $I_D = 8.0\text{A}$			1.56	V
g_{fS}	Forward Transconductance ¹ $V_{GS} = 15\text{V}$ $I_D = 5.0\text{A}$	3.0		9.0	$\text{s}(\overline{\sigma})$
C_{iss}	Input Capacitance $V_{DS} = 25\text{V}$ $V_{GS} = 0$ $f = 1.0\text{MHz}$			350	pF
C_{oss}				150	
C_{rss}				50	
$t_{d(on)}$	Turn–On Delay Time ¹ $V_{DD} = 30\text{V}$ $R_{GEN} = 50\Omega$ $I_D = 5.0\text{A}$ $R_G = 7.5 \text{ ohms}$			30	ns
t_r				75	
$t_{d(off)}$				40	
t_f				45	
SOURCE DRAIN DIODE RATING CHARACTERISTICS					
V_{SD}	Diode Forward Voltage ¹ $I_S = \text{Rated } I_{D(on)}$			5.5	V
t_{on}	Forward Turn OnTime ¹ $V_{GS} = 0$			Negligible	
t_{rr}	Reverse Recovery Time ¹			300	ns

- 1) Pulse test : Pulse Width < 300 μs ,Duty Cycle < 2%
- 2) Pulse width limited by maximum junction temperature