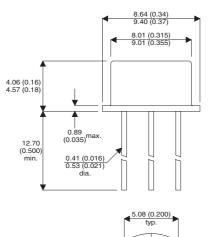
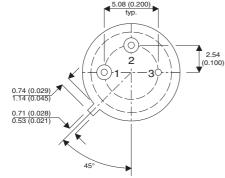


MECHANICAL DATA

Dimensions in mm (inches)





TO39 Package (TO-205AF)

Underside View

Pin 1 - Source Pin 2 - Gate Pin 3 - Drain and Case

N-CHANNEL POWER MOSFET ENHANCEMENT MODE

APPLICATIONS

- FAST SWITCHING
- MOTOR CONTROLS
- POWER SUPPLIES

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{DS}	Drain Source Voltage	100V		
V_{DGR}	Drain Gate Voltage ($R_{GS} = 1M\Omega$)	100V		
$I_D @ T_{case} = 25^{\circ}C$	Continuous Drain Current	3.5A		
$I_D @ T_{case} = 100^{\circ}C$	Continuous Drain Current	2.25A		
I_{DM}	Pulsed Drain Current ¹	14A		
V_{GS}	Gate Source Voltage	±20V		
P_D @ $T_{case} = 25$ °C	Maximum Power Dissipation	15W		
P_D @ $T_{case} = 100$ °C	Maximum Power Dissipation	6W		
Junction to Case	Linear Derating Factor	0.12W/°C		
Junction to ambient	Linear Derating Factor	0.005W/°C		
$T_{J,}T_{stg}$	Operating and Storage Temperature Range	-55 to +150°C		
Lead Temperature	$(\frac{1}{16})^n$ from case for 10 secs)	300°C		

Semelab PIc 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.

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ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Conditions		Min.	Тур.	Max.	Unit
	STATIC ELECTRICAL RATINGS						
BV_DSS	Drain – Source Breakdown Voltage	$V_{GS} = 0$	$I_{D} = 0.25 \text{mA}$	100*			V
V _{GS(th)}	Onto Thursdayld Valteria	$V_{DS} = V_{GS}$	I _D = 0.5A	2*		4.0*	V
	Gate Threshold Voltage	$V_{DS} = 0$	T _A = 125°C	1*		4.0*	
I _{GSSF}	Gate Body Leakage Forward	V _{GS} = 20V				100*	nA
		$V_{DS} = 0$	T _A = 125°C			200*	
I _{GSSR}	Gate Body Leakage Reverse	V _{GS} = -20V				-100*	
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = 80V.	V _{DS} = 80V. V _{GS} =0			0.25*	
		V _{DS} = 100v	V _{GS} = 0			1*	mA
			T _C = 125°C			1	
I _{D(on)}	On State Drain Current1	V _{GS} = 10V	'	3.5			Α
V _{DS(on)}	Static Drain Source On-State Voltage1	V _{GS} = 10V	I _D = 3.5A	2.1*			V
R _{DS(on)}	Static Drain Source On-State	$V_{GS} = {}_{10V}$	I _D = 2.25A			0.6*	Ω
	Resistance1		T _C = 125°C			1.08*	
	DYNAMIC CHARACTERISTICS			"			
gfs	Forward Transductance 1	$V_{DS} = 5V$	I _{DS} = 2.25A	1.0*		3.0*	S (U)
C _{iss}	Input Capacitance	$V_{GS} = 0$ $V_{DS} = 25V$ $ f = 1MHz$		60*		200*	pF
C _{oss}	Output Capacitance			40*		100*	
C _{rss}	Reverse Transfer Capacitance			10*		25*	
t _{d(on)}	Turn-On Delay Time	V _{DD} = 34V	I _D = 2.25A			15*	
t _r	Rise Time	$R_G = 50\Omega \qquad \qquad R_L = 15\Omega$ (MOSFET switching times are essentially independent of operating temperature.)				25*	ns
t _{d(off)}	Turn-Off Delay Time					25*	
t _f	Fall Time					20*	
	BODY- DRAIN DIODE RATINGS & C	HARACTERIS	TICS				
I _S	Continuous Source Current Body Diode	Modified MOS POWER symbol showing the intergal				3.5*	А
I _{SM}	Source Current1 (Body Diode)	P-N junction rectifier.				14	Α
V _{SD}	Diode Forward Voltage ¹	$I_S = 3.5A$ $V_{GS} = 0$ $T_J = 25^{\circ}C$				1.5*	V
t _{rr}	Reverse Recovery Time	$I_F = I_S$ $T_J = 25^{\circ}C$ $d_i / d_t = 100A/\mu s$			200		nS
	AL CHARACTERISTICS						
000	Thermal Resistance Junction – Case Thermal Resistance Junction – Ambient Free Air Operation					8.33*	°C\W
$R_{ hetaJA}$ Th	nermal Resistance Junction – Ambient	Tiee All Operation				175	

Notes

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¹⁾ Pulse Test: Pulse Width \leq 300 μ s, $\delta \leq$ 2%

^{*} JEDEC registered Values