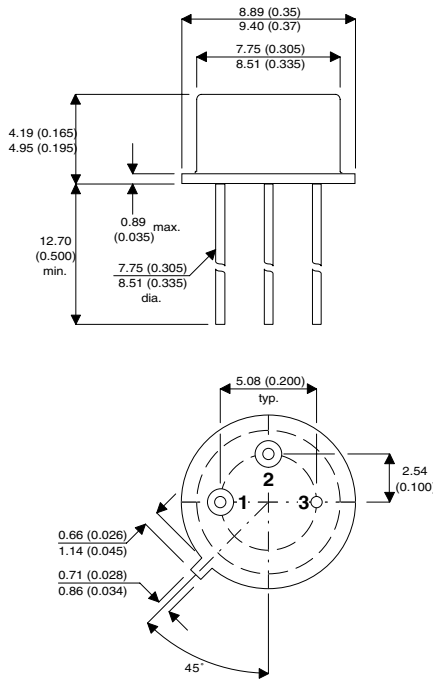


MECHANICAL DATA

Dimensions in mm (inches)



TO-39 METAL PACKAGE

Underside View

PIN 1 – Source
PIN 2 – Gate

PIN 3 – Drain
CASE – Drain

**N-CHANNEL
ENHANCEMENT MODE
MOS TRANSISTOR**

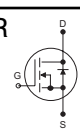
FEATURES

- Switching Regulators
- Converters
- Motor Drivers

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

V_{DS}	Drain – Source Voltage	60V
V_{GS}	Gate – Source Voltage	$\pm 40V$
I_D	Continuous Drain Current @ $T_{CASE} = 25^{\circ}C$	$\pm 1.1A$
I_D	Continuous Drain Current @ $T_{CASE} = 100^{\circ}C$	$\pm 0.8A$
I_{DM}	Pulsed Drain Current *	$\pm 3A$
P_D	Power Dissipation @ $T_{CASE} = 25^{\circ}C$	6.25W
P_D	Power Dissipation @ $T_{CASE} = 100^{\circ}C$	2.5W
T_j	Operating Junction Temperature Range	-55 to $150^{\circ}C$
T_{stg}	Storage Temperature Range	-55 to $150^{\circ}C$
T_L	Lead Temperature ($1/16$ " from case for 10 sec.)	$300^{\circ}C$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit		
STATIC CHARACTERISTICS							
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0V$	$I_D = 10\mu A$	60	100	V	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = 1mA$	0.8	1.5		2.2
I_{GSS}	Gate – Body Leakage Current	$V_{GS} = \pm 15V$	$T_{CASE} = 125^{\circ}C$		1	± 100	nA
		$V_{DS} = 0V$			5	± 500	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = \text{Max. Ratings}$	$V_{GS} = 0V$		1	10	μA
		$V_{DS} = 0.8V$	$V_{GS} = 0V$	$T_{CASE} = 125^{\circ}C$	50	500	
		$V_{GS} = 0V$	$T_{CASE} = 125^{\circ}C$				
$I_{D(on)*}$	On–State Drain Current	$V_{DS} = \geq 2V_{DS(ON)}$	$V_{GS} = 10V$	1.5	1.7		A
$R_{DS(on)*}$	Drain – Source On Resistance	$V_{GS} = 5V$	$I_D = 0.3A$		4.7	5	Ω
		$V_{GS} = 10V$			2.7	3	
		$I_D = 1A$	$T_{CASE} = 125^{\circ}C$		3.9	4.2	
$V_{DS(on)*}$	Drain – Source On Voltage	$V_{GS} = 5V$	$I_D = 0.3A$		1.4	1.5	V
		$V_{GS} = 10V$	$I_D = 1A$		2.7	3	
DYNAMIC CHARACTERISTICS							
g_{FS*}	Forward Transconductance	$V_{DS} = 25V$	$I_D = 0.5A$	170	195		mS
C_{iss}	Input Capacitance	$V_{GS} = 0V$	$V_{DS} = 25V$		35	50	pF
C_{oss}	Output Capacitance				33	40	
C_{rss}	Reverse Transfer Capacitance			$f = 1MHz$	2	10	
SWITCHING CHARACTERISTICS							
t_{ON}	Turn–On Time	$V_{DD} = 25V$	$I_D = 1A$		8	10	ns
t_{OFF}	Turn–Off Time	$R_L = 23\Omega$	$R_G = 25\Omega$		8	10	
BODY-DRAIN DIODE RATINGS AND CHARACTERISTICS							
I_S	Continuous Source Current (Body Diode)	Modified MOSPOWER Symbol Showing The Integral PN Junction Rectifier 				-1.1	A
I_{SM}	Source Current ¹ (Body Diode)					-3	
V_{SD}	Diode Forward Voltage ¹	$I_S = -1.1A$	$V_{GS} = 0V$			-0.9	V
		$T_{CASE} = 125^{\circ}C$					

¹ Pulse Test: Pulse width $\leq 300 \mu s$, Duty Cycle $\leq 2\%$

Parameter	Min.	Typ.	Max.	Unit
$R_{\theta JA}$			170	C/W
$R_{\theta JC}$			20	C/W