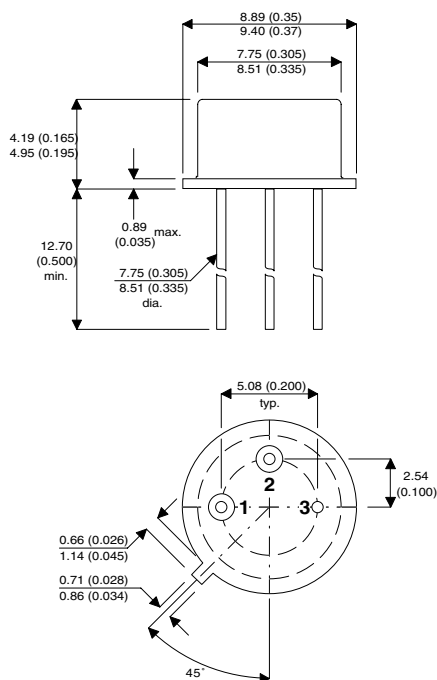


MECHANICAL DATA

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

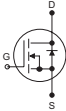
FEATURES

- 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 = 10μA	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} = ±15V			1	±100	nA
		V _{DS} = 0V	T _{CASE} = 125°C		5	±500	
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} = Max. Ratings V _{GS} = 0V			1	10	μA
		V _{DS} =0.8VMax.Ratings			50	500	
		V _{GS} = 0V T _{CASE} = 125°C					
I _{D(on)*}	On–State Drain Current	V _{DS} = ≥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°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 f = 1MHz			35	50	pF
C _{oss}	Output Capacitance				33	40	
C _{rss}	Reverse Transfer Capacitance				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 = 23Ω	R _G = 25Ω		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 T _{CASE} = 125°C				-0.9	V

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

Parameter	Min.	Typ.	Max.	Unit
$R_{\theta JA}$ Thermal Resistance, Junction to Ambient (Free Air Operation)			170	C/W
$R_{\theta JC}$ Thermal Resistance, Junction to Case			20	C/W