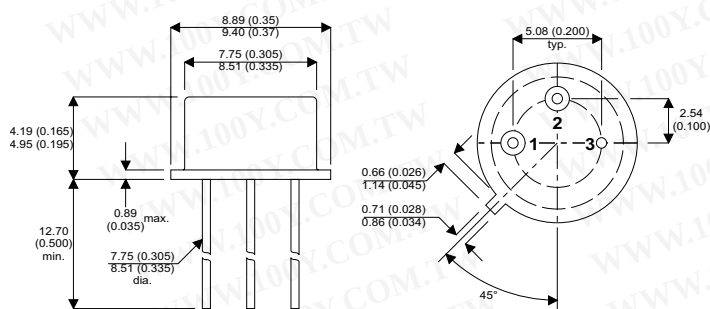


MECHANICAL DATA

Dimensions in mm (inches)



TO-39 METAL PACKAGE

Underside View

Pin 1 = Emitter Pin 2 = Base Pin 3 = Collector

P-CHANNEL POWER MOSFETs

V_{DS} - 100V
 $I_{D(cont)}$ - 6.5A
 $R_{DS(on)}$ 0.30 Ω

FEATURES

- Single pulse avalanche energy rated
- SOA is power dissipation limited
- Nanosecond switching speeds
- Linear transfer characteristics
- High input impedance

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

V_{GS}	Gate – Source Voltage*	$\pm 20V$
V_{DS}	Drain – Source Voltage*	-100V
V_{DG}	Drain – Gate Voltage ($R_{GS} = 20k\Omega$)*	-100V
I_D	Continuous Drain Current @ $T_C = 25^{\circ}C$ *	-6.5A
	@ $T_C = 100^{\circ}C$ *	-4.1A
I_{DM}	Pulsed Drain Current ² *	-25A
E_{AS}	Single Pulse Avalanche Current ³	500mJ
P_D	Power Dissipation @ $T_C = 25^{\circ}C$ *	25W
	Linear Derating Factor*	0.2W/ $^{\circ}C$
T_J, T_{STG}	Operating and Storage Junction Temperature Range*	-55 to +150 $^{\circ}C$
$R_{\theta JC}$	Thermal Resistance Junction to Case*	5 $^{\circ}C/W$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	175 $^{\circ}C/W$

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

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS							
BV _{DSS}	Drain – Source Breakdown Voltage*	V _{GS} = 0	I _D = 250μA	-100			V
R _{DS(on)}	Static Drain – Source On-State Resistance ¹	V _{GS} = -10V	I _D = - 4.1A			0.30*	Ω
V _{GS(th)}	Gate Threshold Voltage*	V _{DS} = V _{GS}	I _D = - 0.25mA	-2		-4	V
I _{GSS}	Forward Gate – Source Leakage	V _{GS} = - 20V				-100	nA
I _{GSS}	Reverse Gate – Source Leakage	V _{GS} = 20V				100	
I _{DSS}	Zero Gate Voltage Drain Current*	V _{DS} = Max rating x 0.8				-250	μA
		V _{GS} = 0V	T _C = -125°C			-1000	
V _{DS(on)}	On-State Drain Voltage ¹	V _{DS} ≥ I _{D(on)} R _{DS(on)} max. V _{GS} = -10V I _D = - 6.5A				- 2.1	V
g _{fs}	Forward Transconductance ¹	V _{DS} = -5V	I _D = - 4.1A	2.5	3.5	7.5	(S ∅)
C _{iss}	Input Capacitance	V _{GS} = 0V V _{DS} = - 25V f = 1.0 MHz			500		pF
C _{oss}	Output Capacitance				300		
C _{rss}	Reverse Transfer Capacitance				100		
Q _g	Total Gate Charge	V _{GS} = -15V I _D = - 15A V _{DS} = 08v Max Rating			25	45	nC
Q _{gs}	Gate – Source Charge				13	23	
Q _{gd}	Gate – Drain (“Miller”) Charge				12	22	
t _{d(on)}	Turn–On Delay Time	V _{DD} = - 42V I _D = - 4.1A Z _o = 50Ω			30	60	ns
t _r	Rise Time				70	140	
t _{d(off)}	Turn–Off Delay Time				70	140	
t _f	Fall Time				70	140	
SOURCE – DRAIN DIODE CHARACTERISTICS							
I _S	Continous Source Current*	Modified MOSFETSymbol showing the integralreverse P-N Junction rectifier.				-6.5	A
I _{SM}	Pulse Source Current (Body Diode) ²					-25	
V _{SD}	Diode Forward Voltage ¹	V _{GS} = 0	I _S = 6.5A T _J = 25°C			4	V
t _{rr}	Reverse Recovery Time	I _F = - 6.5A	T _J = 25°C			250	ns
Q _{rr}	Reverse Recovery Charge	di _F /dt = 100 A/μs		1.8			μC
t _{on}	Forward Turn–On Time			negligible			—

*JEDEC Registered Value

1 Pulse Test: Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$

2 Repetitive Rating: Pulse width limited by max. junction temperature

3 $V_{DD} = 25V$ starting $T_J = 25^{\circ}C$, $L = 17.25mH$, $R_G = 25\Omega$, Peak $I_L = 6.5A$