

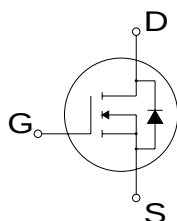
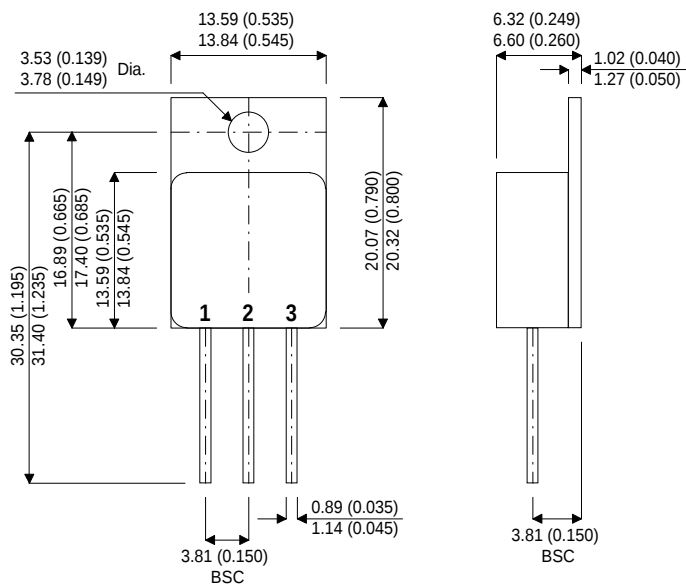
TO-254 Package Outline.

Dimensions in mm (inches)

**N-CHANNEL
ENHANCEMENT MODE
HIGH VOLTAGE
POWER MOSFETS**

V_{DSS} **1000V**
 $I_{D(cont)}$ **3.6A**
 $R_{DS(on)}$ **4.00Ω**

- Faster Switching
- Lower Leakage
- TO-254 Hermetic Package


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

V_{DSS}	Drain – Source Voltage	1000	V
I_D	Continuous Drain Current	3.6	A
I_{DM}	Pulsed Drain Current ¹	14.4	
V_{GS}	Gate – Source Voltage	±30	V
P_D	Total Power Dissipation @ $T_{case} = 25^{\circ}C$	125	W
	Derate Linearly	1.0	W/°C
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	°C
T_L	Lead Temperature : 0.063" from Case for 10 Sec.	300	

1) Repetitive Rating: Pulse Width limited by maximum junction temperature.

THERMAL CHARACTERISTICS

	Characteristic	Min.	Typ.	Max.	Unit
$R_{\theta JC}$	Junction to Case			1.00	°C/W
$R_{\theta JA}$	Junction to Ambient			50	

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

	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0V, I_D = 250\mu A$	1000			V
I_{DSS}	Zero Gate Voltage Drain Current ($V_{GS} = 0V$)	$V_{DS} = V_{DSS}$			250	μA
		$V_{DS} = 0.8V_{DSS}, T_C = 125^{\circ}\text{C}$			1000	
I_{GSS}	Gate – Source Leakage Current	$V_{GS} = \pm 30V, V_{DS} = 0V$			± 100	nA
$V_{GS(TH)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_D = 1.0mA$	2		4	V
$I_{D(ON)}$	On State Drain Current ²	$V_{DS} > I_{D(ON)} \times R_{DS(ON)} \text{ Max}$ $V_{GS} = 10V$	3.6			A
$R_{DS(ON)}$	Drain – Source On State Resistance ²	$V_{GS} = 10V, I_D = 0.5 I_D [\text{Cont.}]$			4.00	Ω

DYNAMIC CHARACTERISTICS

	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
C_{DC}	Drain to Case Capacitance	$f = 1MHz$		15	22	pF
C_{iss}	Input Capacitance	$V_{GS} = 0V$		805	950	pF
C_{oss}	Output Capacitance	$V_{DS} = 25V$		115	160	
C_{rss}	Reverse Transfer Capacitance	$f = 1MHz$		37	60	
Q_g	Total Gate Charge	$V_{GS} = 10V$		35	55	nC
Q_{gs}	Gate – Source Charge	$V_{DD} = 0.5 V_{DSS}$		4.3	7	
Q_{gd}	Gate – Drain (“Miller”) Charge	$I_D = I_D [\text{Cont.}] @ 25^{\circ}\text{C}$		18	27	
$t_{d(on)}$	Turn-on Delay Time	$V_{GS} = 10V$		10	20	ns
t_r	Rise Time	$V_{DD} = 0.5 V_{DSS}$		12	24	
$t_{d(off)}$	Turn-off Delay Time	$I_D = I_D [\text{Cont.}] @ 25^{\circ}\text{C}$		33	50	
t_f	Fall Time	$R_G = 1.8\Omega$		16	32	

SOURCE – DRAIN DIODE RATINGS AND CHARACTERISTICS

	Characteristic	Test Conditions	Min.	Typ.	Max.	Unit
I_S	Continuous Source Current	(Body Diode)			3.6	A
I_{SM}	Pulsed Source Current ¹	(Body Diode)			14.4	
V_{SD}	Diode Forward Voltage ²	$V_{GS} = 0V, I_S = -I_D [\text{Cont.}]$			1.3	V
t_{rr}	Reverse Recovery Time	$I_S = -I_D [\text{Cont.}], di_S / dt = 100A/\mu s$		290	580	ns
Q_{rr}	Reverse Recovery Charge	$I_S = -I_D [\text{Cont.}], di_S / dt = 100A/\mu s$		1.65	3.3	μC

SAFE OPERATING AREA CHARACTERISTICS

	Characteristic		Min.	Typ.	Max.	Unit
SOA1	Safe Operating Area	$V_{DS} = 0.4V_{DSS}, I_{DS} = P_D / 0.4V_{DSS}, t = 1 \text{ Sec.}$	125			W
SOA2	Safe Operating Area	$I_{DS} = I_D [\text{Cont.}], V_{DS} = P_D / I_D [\text{Cont.}], t = 1 \text{ Sec.}$	125			
I_{LM}	Inductive Current Clamped		3.6			A

1) Repetitive Rating: Pulse Width limited by maximum junction temperature.

2) Pulse Test: Pulse Width < 380 μs , Duty Cycle < 2%



CAUTION — Electrostatic Sensitive Devices. Anti-Static Procedures Must Be Followed.

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