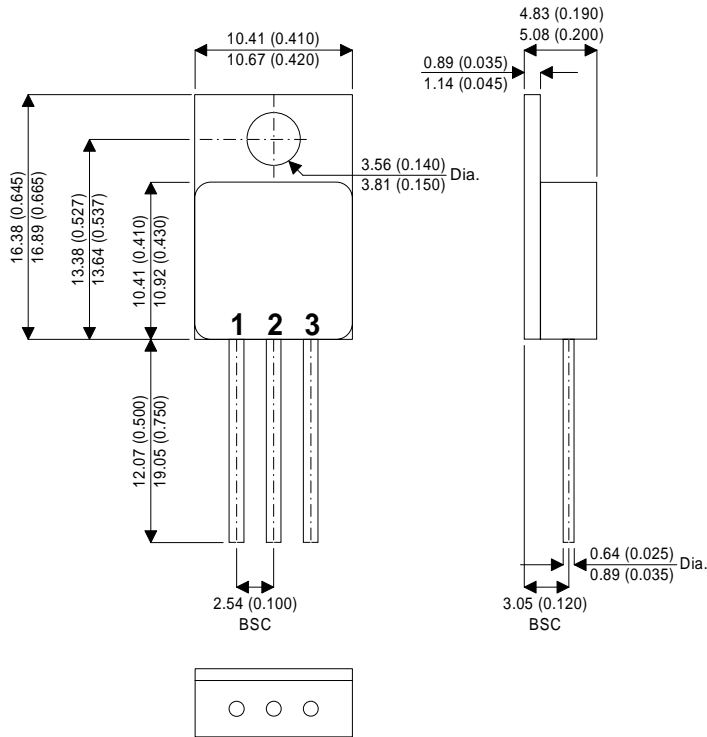


MECHANICAL DATA

Dimensions in mm (inches)



TO257AA – Metal Package

Pin 1 – Drain Pin 2 – Source Pin 3 – Gate

**N-CHANNEL
POWER MOSFET
FOR HI-REL
APPLICATIONS**

V_{DSS} 500V
I_{D(cont)} 4.5A
R_{DS(on)} 1.65Ω

FEATURES

- HERMETICALLY SEALED TO257 METAL PACKAGE
- SIMPLE DRIVE REQUIREMENTS
- LIGHTWEIGHT
- SCREENING OPTIONS AVAILABLE
- ALL LEADS ISOLATED FROM CASE

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

V _{GS}	Gate – Source Voltage	±20V
I _D	Continuous Drain Current (V _{GS} = 10V , T _{case} = 25°C)	4.5A
I _D	Continuous Drain Current (V _{GS} = 10V , T _{case} = 100°C)	2.8A
I _{DM}	Pulsed Drain Current ¹	18A
P _D	Power Dissipation @ T _{case} = 25°C	75W
	Linear Derating Factor	0.6W/°C
T _J , T _{stg}	Operating and Storage Temperature Range	-55 to 150°C
T _L	Package Mounting Surface Temperature (for 5 sec)	300°C
R _{θJC}	Thermal Resistance Junction to Case	1.67°C/W max.

Notes

1) Pulse Test: Pulse Width ≤ 300ms, δ ≤ 2%

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
STATIC ELECTRICAL RATINGS					
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$	$I_D = 1\text{mA}$	500	V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = 1\text{mA}$		0.78	$\text{V}/^{\circ}\text{C}$
$R_{DS(on)}$	Static Drain – Source On–State Resistance ¹	$V_{GS} = 10\text{V}$	$I_D = 2.4\text{A}$		1.65
		$V_{GS} = 10\text{V}$	$I_D = 3.7\text{A}$		1.84
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = 250\mu\text{A}$	2	4
g_{fs}	Forward Transconductance ¹	$V_{DS} \geq 15\text{V}$	$I_{DS} = 2.4\text{A}$	1.5	$\text{S}(\bar{v})$
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$	$V_{DS} = 0.8BV_{DSS}$ $T_J = 125^{\circ}\text{C}$		25
					250
I_{GSS}	Forward Gate – Source Leakage	$V_{GS} = 20\text{V}$			100
I_{GSS}	Reverse Gate – Source Leakage	$V_{GS} = -20\text{V}$			-100
DYNAMIC CHARACTERISTICS					
C_{iss}	Input Capacitance	$V_{GS} = 0$		610	pF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$		135	
C_{riss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		65	
Q_g	Total Gate Charge ¹	$V_{GS} = 10\text{V}$	$I_D = 3.7\text{A}$	19.8	29.5
Q_{gs}	Gate – Source Charge ¹	$V_{GS} = 10\text{V}$	$I_D = 3.7\text{A}$	2.2	4.6
Q_{gd}	Gate – Drain (“Miller”) Charge ¹	$V_{DS} = 0.5BV_{DSS}$		5.5	19.7
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = 250\text{V}$			35
t_r	Rise Time	$I_D = 3.7\text{A}$			30
$t_{d(off)}$	Turn–Off Delay Time	$R_G = 7.5\Omega$			55
t_f	Fall Time	$V_{GS} = 10\text{V}$			30
SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current				3.7
I_{SM}	Pulse Source Current ²				14
V_{SD}	Diode Forward Voltage	$I_S = 3.7\text{A}$	$T_C = 25^{\circ}\text{C}$		1.4
t_{rr}	Reverse Recovery Time	$I_S = 3.7\text{A}$	$T_J = 25^{\circ}\text{C}$		900
Q_{rr}	Reverse Recovery Charge	$d_i / d_t \leq 100\text{A}/\mu\text{s}$			7.0
t_{on}	Forward Turn–On Time	$V_{DD} \leq 50\text{V}$		Negligible	
PACKAGE CHARACTERISTICS					
L_D	Internal Drain Inductance (6mm down drain lead to centre of die)			8.7	nH
L_S	Internal Source Inductance (6mm down source lead to centre of source bond pad)			8.7	

Notes

- 1) Pulse Test: Pulse Width $\leq 300\text{ms}$, $\delta \leq 2\%$
- 2) Repetitive Rating – Pulse width limited by maximum junction temperature.