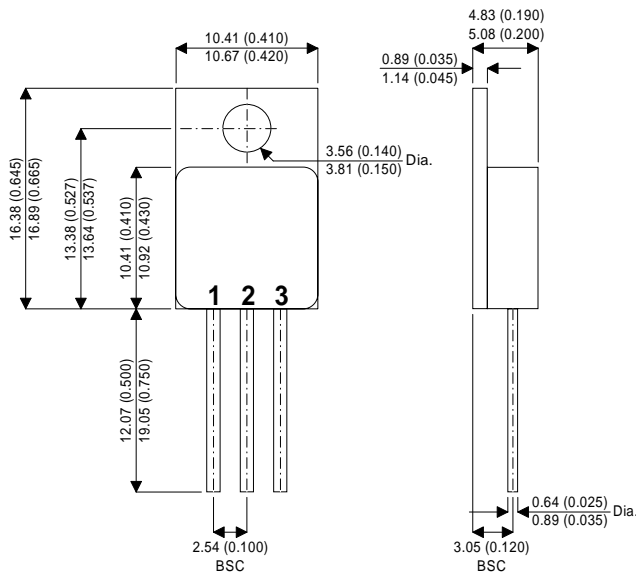


MECHANICAL DATA

Dimensions in mm(inches)



TO-257AB Metal Package

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

**N-CHANNEL
ENHANCEMENT MODE
TRANSISTOR**

$V_{(BR)DSS}$ **100V**
 $I_{D(A)}$ **20A**
 $R_{DS(on)}$ **0.075Ω**

FEATURES

- TO257AB HERMETIC PACKAGE FOR HIGH RELIABILITY APPLICATIONS
- SCREENING OPTIONS AVAILABLE
- SIMPLE DRIVE REQUIREMENTS

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

V_{DS}	Drain – Source Voltage	100V
V_{GS}	Gate – Source Voltage	±20V
I_D	Continuous Drain Current ($T_J = 150^{\circ}C$)	$T_C = 25^{\circ}C$ 20A
		$T_C = 100^{\circ}C$ 12A
I_{DM}	Pulsed Drain Current	80A
P_D	Power Dissipation	$T_C = 25^{\circ}C$ 60W
		$T_C = 100^{\circ}C$ 20W
T_J, T_{stg}	Operating Junction and Storage Temperature Range	-55 to 150°C
T_L	Lead Temperature ($1/16$ " from case for 10 sec.)	300°C

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit			
STATIC ELECTRICAL RATINGS								
$V_{(BR)DSS}$	Drain–Source Breakdown Voltage	$V_{GS} = 0$	$I_D = 250\mu\text{A}$	100	V			
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = 250\mu\text{A}$	2	4	V		
I_{GSS}	Gate – Body Leakage	$V_{DS} = 0$	$V_{GS} = \pm 20\text{V}$		± 100	nA		
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 80\text{V}$	$T_J = 125^\circ\text{C}$		25	μA		
		$V_{GS} = 0$			250			
$I_{D(on)}$	On–State Drain Current ¹	$V_{DS} = 10\text{V}$	$V_{GS} = 10\text{V}$	20		A		
$r_{DS(on)}$	Drain – Source On–State Resistance ¹	$V_{GS} = 10\text{V}$	$T_J = 125^\circ\text{C}$		0.06	0.075	Ω	
		$I_D = 12\text{A}$			0.11	0.14		
g_{fs}	Forward Transconductance ¹	$V_{DS} = 15\text{V}$	$I_{DS} = 12\text{A}$	5.0	8.0	S		
DYNAMIC CHARACTERISTICS								
C_{iss}	Input Capacitance	$V_{GS} = 0$			1400	pF		
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$			480			
C_{riss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$			110			
Q_g	Total Gate Charge ²	$V_{DS} = 0.5 \times V_{(BR)DSS}^{50\text{V}}$	$V_{GS} = 10\text{V}$	$I_D = 20\text{A}$		35	50	nC
Q_{gs}	Gate Source Charge ²					10	20	
Q_{gd}	Gate Drain Charge ²					18	25	
$t_{d(on)}$	Turn–On Delay Time ²	$V_{DD} = 50\text{V}$	$I_D = 20\text{A}$		13	30	ns	
t_r	Rise Time ²	$V_{GEN} = 10\text{V}$			85	120		
$t_{d(off)}$	Turn–Off Delay Time ²	$R_L = 2.5\Omega$			35	80		
t_f	Fall Time ²	$R_G = 4.7\Omega$			75	95		
SOURCE – DRAIN DIODE CHARACTERISTICS								
I_S	Continuous Current				20	A		
I_{SM}	Pulsed Current				80			
V_{SD}	Diode Forward Voltage ¹	$I_F = 20\text{A}$	$V_{GS} = 0$		2.5	V		
t_{rr}	Reverse Recovery Time	$I_F = 20\text{A}$			150	400	ns	
Q_{rr}	Reverse Recovery Charge	$di/dt = 100\text{A}/\mu\text{s}$			0.5		μC	

¹ Pulse test : Pulse Width < 300 μs ,Duty Cycle < 2%

² Independent of Operating Temperature

THERMAL RESISTANCE CHARACTERISTICS

Parameter	Min.	Typ.	Max.	Unit
R_{thJC}			2.1	
R_{thJA}			80	$^\circ\text{C}/\text{W}$
R_{thCS}		1.0		