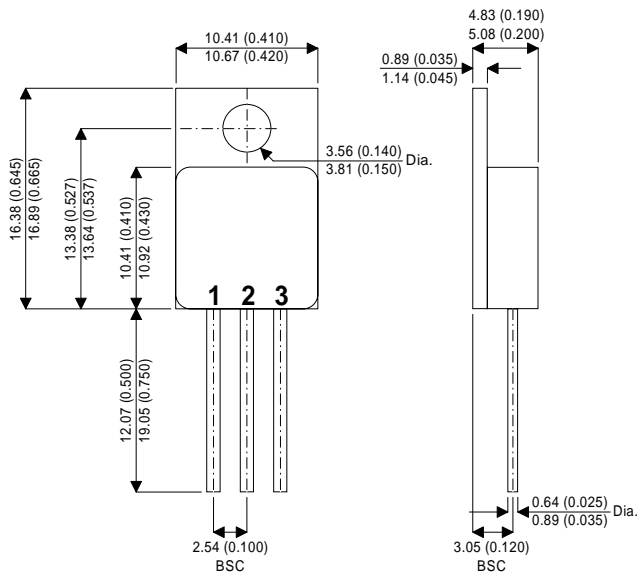


**MECHANICAL DATA**

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

<sup>1</sup> Pulse test : Pulse Width < 300 $\mu\text{s}$  ,Duty Cycle < 2%

<sup>2</sup> 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		