

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 1.0\text{mA}$	400			V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = 1.0\text{mA}$		0.46		$\text{V}/^\circ\text{C}$
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 250\mu\text{A}$	2		4	V
I_{GSS}	Forward Gate-Source Leakage	$V_{GS} = 20\text{V}$			100	nA
I_{GSS}	Reverse Gate-Source Leakage	$V_{GS} = -20\text{V}$			-100	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$ $V_{DS} = 0.8 BV_{DSS}$ $T_J = 125^\circ\text{C}$			25	μA
					250	
$R_{DS(on)}^{(1)}$	Static Drain-Source On-State Resistance	$V_{GS} = 10\text{V}$ $I_D = 4.4\text{A}$			0.55	Ω
		$V_{GS} = 10\text{V}$ $I_D = 6.9\text{A}$			0.63	
$g_{fs}^{(1)}$	Forward Transconductance	$V_{DS} \geq 15\text{V}$ $I_{DS} = 4.4\text{A}$	4.9			$\text{S}(\Omega)$

DYNAMIC CHARACTERISTICS

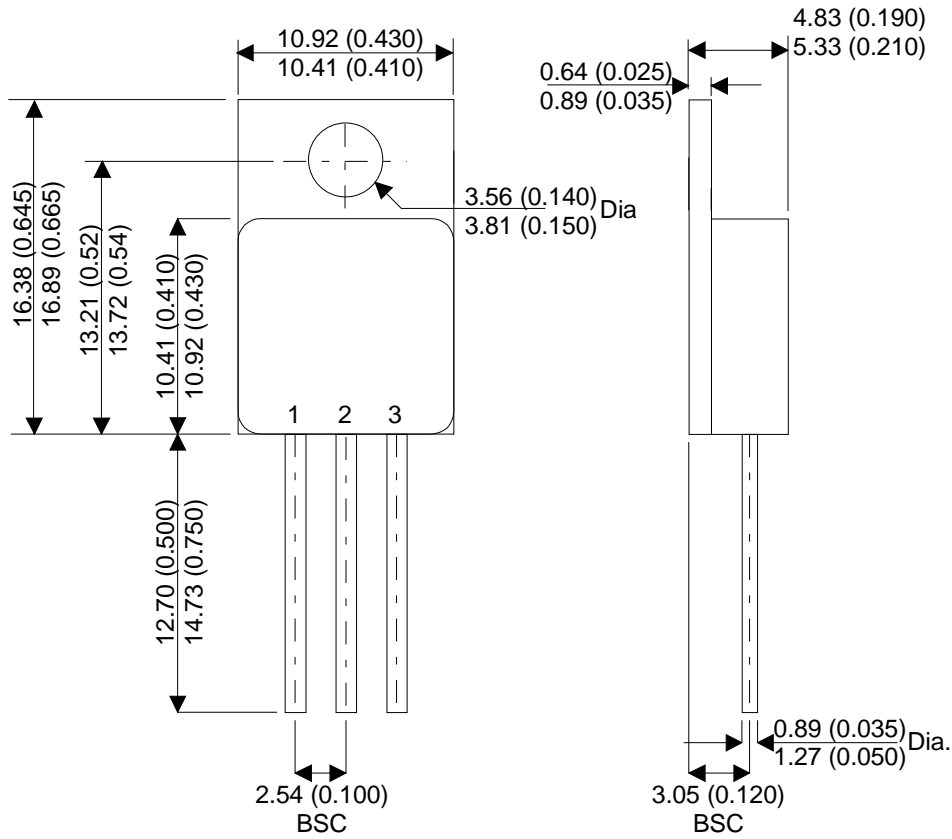
C_{iss}	Input Capacitance	$V_{GS} = 0$		1400		μF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$		350		
C_{rss}	Reverse Transfer Capacitance	$f = 1.0\text{MHz}$		230		
$Q_g^{(1)(3)}$	Total Gate Charge	$V_{GS} = 10\text{V}$			65	nC
$Q_{gs}^{(1)(3)}$	Gate-Source Charge	$I_D = 6.9\text{A}$			10	
$Q_{gd}^{(1)(3)}$	Gate-Drain Charge	$V_{DS} = 0.5BV_{DSS}$			40.5	
$t_{d(on)}$	Turn-On Delay Time	$V_{DD} = 200\text{V}$			25	ns
t_r	Rise Time	$I_D = 6.9\text{A}$			92	
$t_{d(off)}$	Turn-Off Delay Time	$R_G = 9.1\Omega$			79	
t_f	Fall Time	$V_{GS} = 10\text{V}$			58	

SOURCE-DRAIN DIODE CHARACTERISTICS

I_S	Continuous Source Current				6.9	A
$I_{SM}^{(2)}$	Pulse Source Current				27	
V_{SD}	Diode Forward Voltage	$I_S = 6.9\text{A}$ $T_J = 25^\circ\text{C}$ $V_{GS} = 0$			1.5	V
$t_{rr}^{(1)(3)}$	Reverse Recovery Time	$I_S = 6.9\text{A}$ $T_J = 25^\circ\text{C}$			600	ns
$Q_{rr}^{(1)(3)}$	Reverse Recovery Charge	$V_{DD} \leq 50\text{V}$ $di/dt = 100\text{A}/\mu\text{s}$			5.6	μC

MECHANICAL DATA

Dimensions in mm (inches)



TO220M (TO-257AB)

Pin 1 - Gate

Pin 2 - Drain

Pin 3 - Source