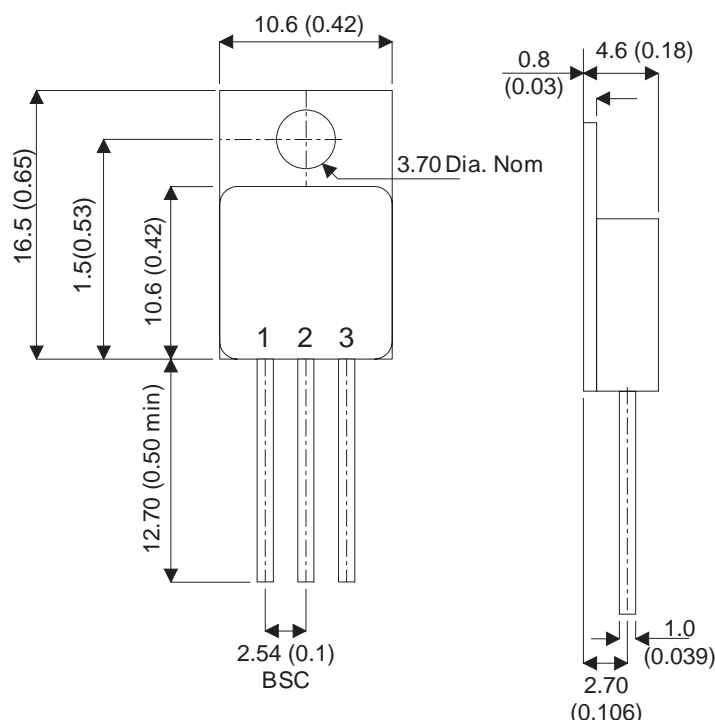


**MECHANICAL DATA**

Dimensions in mm



**MOS POWER N-CHANNEL  
ENHANCEMENT MODE  
TRANSISTORS**

**FEATURES**

- HERMETIC TO220 ISOLATED METAL PACKAGE
- CECC SCREENING OPTIONS
- JAN LEVEL SCREENING OPTIONS

**APPLICATIONS:**

Hermetically sealed version for high reliability power linear and switching applications

**TO220M (TO-257AB)- Isolated Metal Package**

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

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_{case} = 25^{\circ}C$ unless otherwise stated)		<b>BUZ50A</b>	<b>BUZ50B</b>
$V_{DS}$	Drain – Source Voltage	1000V	1000V
$V_{GS}$	Gate – Source Voltage	$\pm 20V$	$\pm 20V$
$I_D$	Continuous Drain Current	1.0A	1.5A
$I_{DM}$	Maximum Pulsed Drain Current	4.0A	4.5A
$P_D$	Total Power Dissipation at $T_{case} \leq 25^{\circ}C$	75W	
$T_{stg}$	Storage Temperature Range	$-65^{\circ}C$ To $200^{\circ}C$	
$T_j$	Operating Junction Temperature Range	200°C	

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$BV_{DSS}$ Drain – Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 5.0\text{mA}$	1000			V
$I_{DSS}$ Zero Gate Voltage Drain Current	$V_{DS} = 1000\text{V}$ $V_{GS} = 0\text{V}$ $T_J = 100^\circ\text{C}$			0.25	mA
				2.5	
$I_{GSS}$ Gate – Body Leakage Current	$V_{GS} = 20\text{V}$ $V_{DS} = 0$			500	nA
$V_{GS(th)}$ * Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 1.0\text{mA}$ $T_J = 100^\circ\text{C}$			2.0	V
				1.5	
$V_{DS(on)}$ * Drain Source On Voltage	$V_{GS} = 10\text{V}$ $I_D = 0.5\text{A}$ $T_J = 100^\circ\text{C}$			5.0	V
				10	
				12	
$g_{fs}$ * Forward Transconductance	$V_{DS} = 15\text{V}$ $I_D = 0.5\text{A}$			0.5	S
$R_{DS(on)}$ * Drain – Source On–State Resistance*	$V_{GS} = 10\text{V}$ $I_D = 0.5\text{A}$			10	$\Omega$
$C_{iss}$ Input Capacitance	$V_{GS} = 0$			1200	pF
$C_{oss}$ Output Capacitance	$V_{DS} = 25\text{V}$			300	
$C_{rss}$ Reverse Transfer Capacitance	$f = 1\text{MHz}$			80	
$t_{d(on)}$ * Turn–On Delay Time	$T_J = 100^\circ\text{C}$ $I_D = 0.5\text{A}$			50	ns
$t_r$ * Rise Time				150	
$t_{d(off)}$ * Turn–Off Delay Time	$V_{DS} = 125\text{V}$ $R_{gen} = 50\Omega$			200	
$t_f$ * Fall Time				100	
<b>SOURCE – DRAIN DIODE CHARACTERISTICS</b>					
$V_{SD}$ * Diode Forward Voltage	$I_S = 1.0\text{A}$ $V_{GS} = 0\text{V}$			1.0	V
$t_{on}$ Forward Turn On Time				250	ns
$t_{rr}$ Reverse Recovery Time				420	

**NOTE:** \*Pulsed : Pulse duration = 300  $\mu\text{s}$  , duty cycle  $\leq 2\%$

**THERMAL DATA**

$R_{\theta JC}$ Thermal Resistance Junction – Case			1.67	$^\circ\text{C/W}$
$R_{\theta JA}$ Thermal Resistance Junction – Ambient			75	