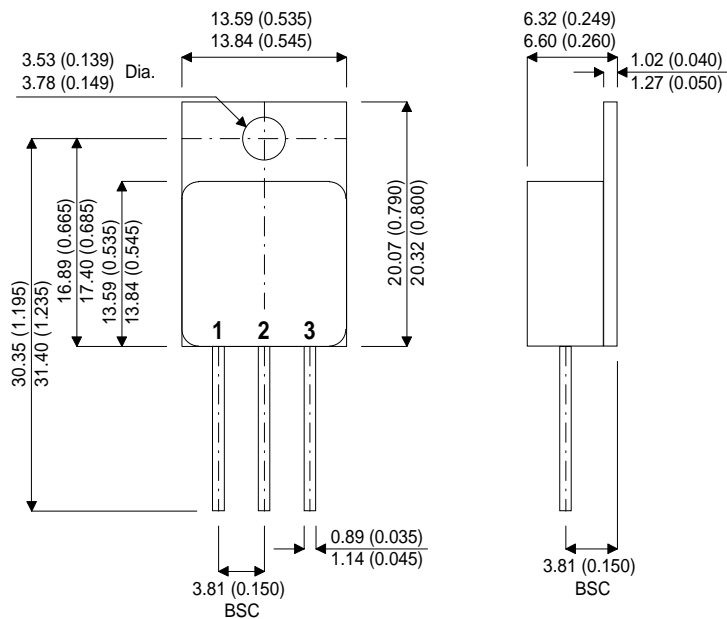


MECHANICAL DATA

Dimensions in mm (inches)



**N-CHANNEL
POWER MOSFET**

V_{DSS} **55V**
 $I_{D(cont)}$ **35A**
 $R_{DS(on)}$ **0.015Ω**

FEATURES

- N-CHANNEL MOSFET
- HERMETIC ISOLATED TO-254 PACKAGE
- CERAMIC SURFACE MOUNT PACKAGE OPTION

TO-254AA – Isolated Metal Package

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

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

V_{GS}	Gate – Source Voltage		$\pm 20\text{V}$
I_D	Continuous Drain Current*	@ $V_{GS} = 10\text{V}$, $T_C = 25^\circ\text{C}$	35A
		@ $V_{GS} = 10\text{V}$, $T_C = 100^\circ\text{C}$	35A
I_{DM}	Pulsed Drain Current		140A
P_D	Max. Power Dissipation	@ $T_C = 25^\circ\text{C}$	125W
	Linear Derating Factor		1.0W / °C
I_L	Avalanche Current, Clamped ¹		35A
dv / dt	Peak Diode Recovery ²		2.6V / ns
$R_{\theta JC}$	Thermal Resistance Junction – Case		1.0°C / W
T_J, T_{STG}	Operating Junction and Storage Temperature Range		-55 to 150°C
T_L	Lead Temperature (1.6mm from case for 10s)		300°C

1) Repetitive Rating: Pulse width limited by Max. Junction Temperature.
 2) $I_{SD} \leq 35\text{A}$, $di/dt \leq 230\text{A} / \mu\text{S}$, $V_{DD} \leq BV_{DSS}$, $T_J \leq 150^\circ\text{C}$

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 ($T_J = 25^\circ\text{C}$ unless otherwise stated)						
Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
STATIC ELECTRICAL RATINGS						
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$ $I_D = 250\mu\text{A}$	55			V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = 1\text{mA}$		0.056		$\text{V}/^\circ\text{C}$
$R_{DS(on)}$	Static Drain – Source On–State Resistance ²	$V_{GS} = 10\text{V}$ $I_D = 35\text{A}$			0.015	Ω
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$ $I_D = 250\mu\text{A}$	2		4	V
g_{fs}	Forward Transconductance ²	$V_{DS} \geq 15\text{V}$ $I_{DS} = 35\text{A}$	34			$\text{S}(\overline{5})$
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS} = 55\text{V}$ $V_{GS} = 0$			25	μA
		$V_{DS} = 44\text{V}$ $T_J = 125^\circ\text{C}$			250	
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	
DYNAMIC CHARACTERISTICS						
C_{iss}	Input Capacitance	$V_{GS} = 0$		3600		pF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$		1200		
C_{rss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		445		
Q_g	Total Gate Charge	$V_{GS} = 10\text{V}$			170	nC
Q_{gs}	Gate – Source Charge	$I_D = 35\text{A}$			32	
Q_{gd}	Gate – Drain (“Miller”) Charge	$V_{DS} = 44\text{V}$			74	
$t_{d(on)}$	Turn– On Delay Time	$V_{DD} = 28\text{V}$			22	ns
t_r	Rise Time	$I_D = 35\text{A}$			80	
$t_{d(off)}$	Turn–Off Delay Time	$R_G = 2.5\Omega$			70	
t_f	Fall Time	$V_{GS} = 10\text{V}$			55	
SOURCE – DRAIN DIODE CHARACTERISTICS						
I_S	Continuous Source Current (Body)				35	A
I_{SM}	Pulse Source Current ¹				140	
V_{SD}	Diode Forward Voltage	$I_S = 35\text{A}$ $V_{GS} = 0$			1.3	V
t_{rr}	Reverse Recovery Time ³	$I_F = 35\text{A}$ $T_J = 25^\circ\text{C}$			130	ns
Q_{rr}	Reverse Recovery Charge ³	$d_i / d_t \leq 100\text{A}/\mu\text{s}$ $V_{DD} \leq 25\text{V}$			410	nC
t_{on}	Forward Turn–On Time			Negligible		