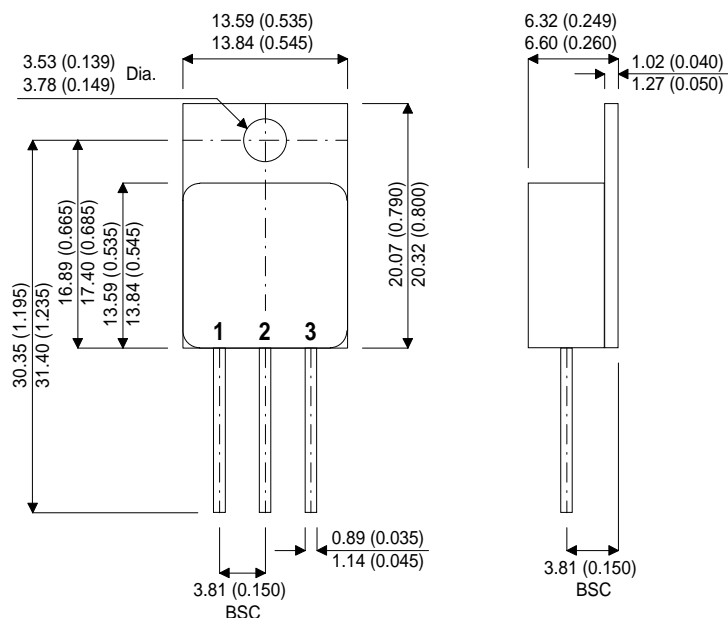


MECHANICAL DATA

Dimensions in mm (inches)



**N-CHANNEL
POWER MOSFET**

V_{DSS} 200V
I_{D(cont)} 18A
R_{DS(on)} 0.18Ω

FEATURES

- N-CHANNEL MOSFET
- HIGH VOLTAGE
- HERMETIC ISOLATED TO-254 PACKAGE
- ELECTRICALLY ISOLATED

TO-254AA – Isolated Metal Package

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

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise stated)

V _{GS}	Gate – Source Voltage		±20V
I _D	Continuous Drain Current	@ V _{GS} = 10V , T _C = 25°C	18A
		@ V _{GS} = 10V , T _C = 100°C	11A
I _{DM}	Pulsed Drain Current		72A
P _D	Max. Power Dissipation	@ T _C = 25°C	125W
	Linear Derating Factor		1.0W / °C
I _{AR}	Avalanche Current ¹		18
dv / dt	Peak Diode Recovery ²		5.0V / ns
R _{θJC}	Thermal Resistance Junction – Case		1.0°C / W
R _{θJA}	Thermal Resistance Junction – Ambient		48°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) V_{DD} = 50V , Starting T_J = 25°C , L ≥ 1.3mH , V_{GS} = 10V , Peak I_L = 18A

2) I_{SD} ≤ 18A , di/dt ≤ 150A / μS , V_{DD} ≤ 200V , T_J ≤ 150°C

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	$V_{GS} = 0$	$I_D = 1\text{mA}$	200	V	
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C $I_D = 1\text{mA}$		0.29	$\text{V}/^\circ\text{C}$	
$R_{DS(on)}$	Static Drain – Source On–State Resistance ²	$V_{GS} = 10\text{V}$	$I_D = 11\text{A}$		0.18	Ω
		$V_{GS} = 10\text{V}$	$I_D = 18\text{A}$		0.25	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = 250\mu\text{A}$	2.0	4.0	V
g_{fs}	Forward Transconductance ²	$V_{DS} \geq 15\text{V}$	$I_{DS} = 11\text{A}$	6.1		$\text{S}(\overline{\tau})$
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$	$V_{DS} = 160\text{V}$		25	μA
			$T_J = 125^\circ\text{C}$		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	$V_{GS} = 0$		1300		pF
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$		400		
C_{rss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		130		
Q_g	Total Gate Charge	$V_{GS} = 10\text{V}$			60	nC
Q_{gs}	Gate – Source Charge	$I_D = 18\text{A}$			10.6	
Q_{gd}	Gate – Drain (“Miller”) Charge	$V_{DS} = 100\text{V}$			37.6	
$t_{d(on)}$	Turn– On Delay Time	$V_{DD} = 100\text{V}$ $I_D = 18\text{A}$ $V_{GS} = 10\text{V}$ $R_G = 9.1\Omega$			20	ns
t_r	Rise Time				105	
$t_{d(off)}$	Turn–Off Delay Time				58	
t_f	Fall Time				67	
SOURCE – DRAIN DIODE CHARACTERISTICS						
I_S	Continuous Source Current				18	A
I_{SM}	Pulse Source Current ¹				72	
V_{SD}	Diode Forward Voltage ²	$I_S = 18\text{A}$	$T_J = 25^\circ\text{C}$		1.5	V
		$V_{GS} = 0$				
t_{rr}	Reverse Recovery Time ²	$I_F = 18\text{A}$	$T_J = 25^\circ\text{C}$		500	ns
Q_{rr}	Reverse Recovery Charge ²	$d_i / d_t \leq 100\text{A}/\mu\text{s}$ $V_{DD} \leq 50\text{V}$			5.3	μC
t_{on}	Forward Turn–On Time				Negligible	
PACKAGE CHARACTERISTICS						
L_D	Internal Drain Inductance Measured from drain lead (6mm / 0.25in from package) to			4.0		nH
L_S	Internal Source Inductance source lead (6mm / 0.25in from package).			4.0		

1) Repetitive Rating – Pulse width limited by Maximum Junction Temperature

2) Pulse Test: Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$.

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