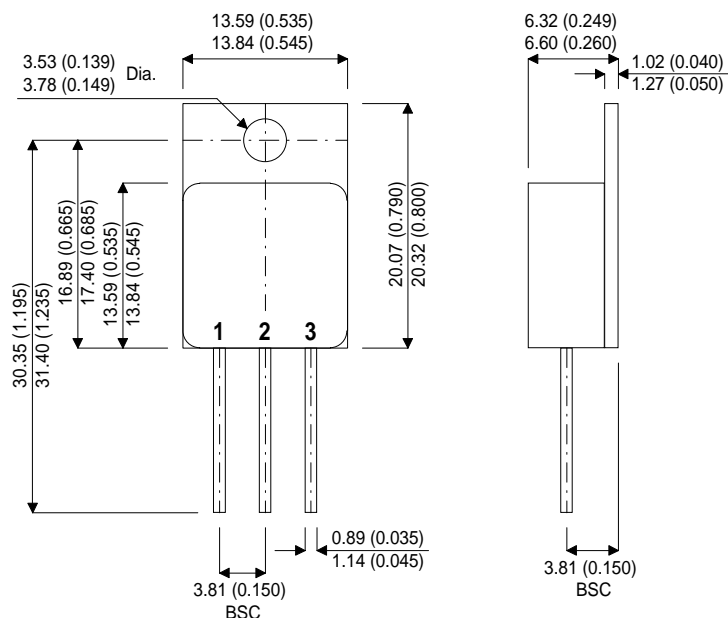


MECHANICAL DATA

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

V_{GS}	Gate – Source Voltage		$\pm 20V$
I_D	Continuous Drain Current	@ $V_{GS} = 10V$, $T_C = 25^\circ\text{C}$	18A
		@ $V_{GS} = 10V$, $T_C = 100^\circ\text{C}$	11A
I_{DM}	Pulsed Drain Current		72A
P_D	Max. Power Dissipation	@ $T_C = 25^\circ\text{C}$	125W
	Linear Derating Factor		1.0W / °C
I_{AR}	Avalanche Current ¹		18
dv / dt	Peak Diode Recovery ²		5.0V / ns
$R_{\theta JC}$	Thermal Resistance Junction – Case		1.0°C / W
$R_{\theta JA}$	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 $T_J = 25^\circ\text{C}$, $L \geq 1.3mH$, $V_{GS} = 10V$, Peak $I_L = 18A$

2) $I_{SD} \leq 18A$, $di/dt \leq 150A / \mu s$, $V_{DD} \leq 200V$, $T_J \leq 150^\circ\text{C}$

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 = 1mA	200			V
ΔBV _{DSS}	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I _D = 1mA			0.29		V/°C
R _{DS(on)}	Static Drain – Source On–State Resistance ²	V _{GS} = 10V	I _D = 11A			0.18	Ω
		V _{GS} = 10V	I _D = 18A			0.25	
V _{GS(th)}	Gate Threshold Voltage	V _{DS} = V _{GS}	I _D = 250μA	2.0		4.0	V
g _{fs}	Forward Transconductance ²	V _{DS} ≥ 15V	I _{DS} = 11A	6.1			S(Ω)
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} = 0	V _{DS} = 160V			25	μA
			T _J = 125°C			250	
I _{GSS}	Forward Gate – Source Leakage	V _{GS} = 20V				100	nA
I _{GSS}	Reverse Gate – Source Leakage	V _{GS} = –20V				–100	
DYNAMIC CHARACTERISTICS							
C _{iss}	Input Capacitance	V _{GS} = 0			1300		pF
C _{oss}	Output Capacitance	V _{DS} = 25V			400		
C _{rss}	Reverse Transfer Capacitance	f = 1MHz			130		
Q _g	Total Gate Charge	V _{GS} = 10V				60	nC
Q _{gs}	Gate – Source Charge	I _D = 18A				10.6	
Q _{gd}	Gate – Drain (“Miller”) Charge	V _{DS} = 100V				37.6	
t _{d(on)}	Turn– On Delay Time	V _{DD} = 100V				20	ns
t _r	Rise Time	I _D = 18A V _{GS} = 10V				105	
t _{d(off)}	Turn–Off Delay Time	R _G = 9.1Ω				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 = 18A	T _J = 25°C			1.5	V
		V _{GS} = 0					
t _{rr}	Reverse Recovery Time ²	I _F = 18A	T _J = 25°C			500	ns
Q _{rr}	Reverse Recovery Charge ²	d _i / d _t ≤ 100A/μs V _{DD} ≤ 50V				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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