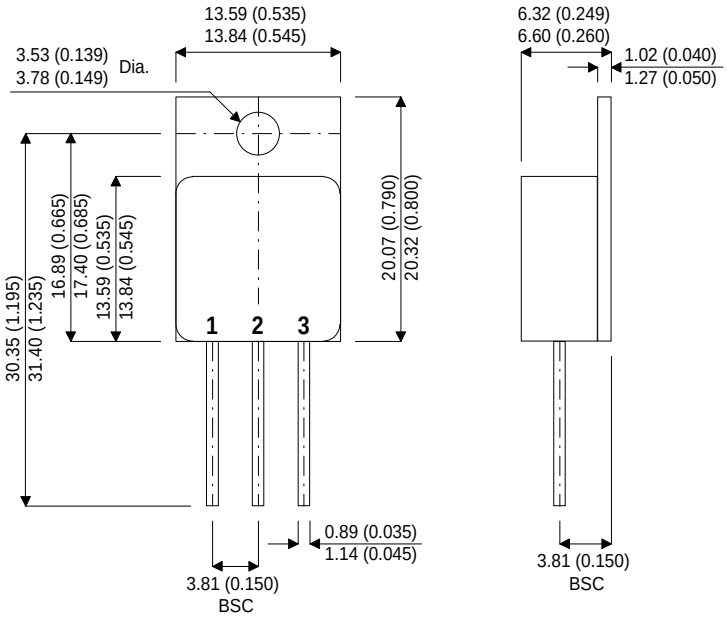
IRFM3205

MECHANICAL DATA
Dimensions in mm (inches)



TO–254AA – Isolated Metal Package

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

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**

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	35A
		@ V_{GS} = 10V , T_C = 100°C	35A
I_{DM}	Pulsed Drain Current		140A
P_D	Max. Power Dissipation	@ T_C = 25°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) Repetative Rating: Pulse width limited by Max. Junction Temperature.

2) $I_{SD} \leq 35A$, $di/dt \leq 230A / \mu S$, $V_{DD} \leq BV_{DSS}$, $T_J \leq 150°C$

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SEME LAB

IRFM3205

ELECTRICAL CHARACTERISTICS (T_J = 25°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 = 250µA	55			V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I_D = 1mA			0.056		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance [2]	V_{GS} = 10V	I_D = 35A			0.015	Ω
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS}	I_D = 250µA	2		4	V
g_{fs}	Forward Transconductance [2]	V_{DS} ≥ 15V	I_{DS} = 35A	34			S(℧)
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS} = 55V	V_{GS} = 0			25	µA
		V_{DS} = 44V	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			3600		pF
C_{oss}	Output Capacitance	V_{DS} = 25V			1200		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz			445		
Q_g	Total Gate Charge	V_{GS} = 10V				170	nC
Q_{gs}	Gate – Source Charge	I_D = 35A				32	
Q_{gd}	Gate – Drain (“Miller”) Charge	V_{DS} = 44V				74	
$t_{d(on)}$	Turn– On Delay Time	V_{DD} = 28V				22	ns
t_r	Rise Time	I_D = 35A				80	
$t_{d(off)}$	Turn–Off Delay Time	R_G = 2.5Ω				70	
t_f	Fall Time	V_{GS} = 10V				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 = 35A	V_{GS} = 0			1.3	V
t_{rr}	Reverse Recovery Time3	I_F = 35A	T_J = 25°C			130	ns
Q_{rr}	Reverse Recovery Charge3	d_i / d_t ≤ 100A/µs	V_{DD} ≤ 25V			410	nC
t_{on}	Forward Turn–On Time				Negligible		

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