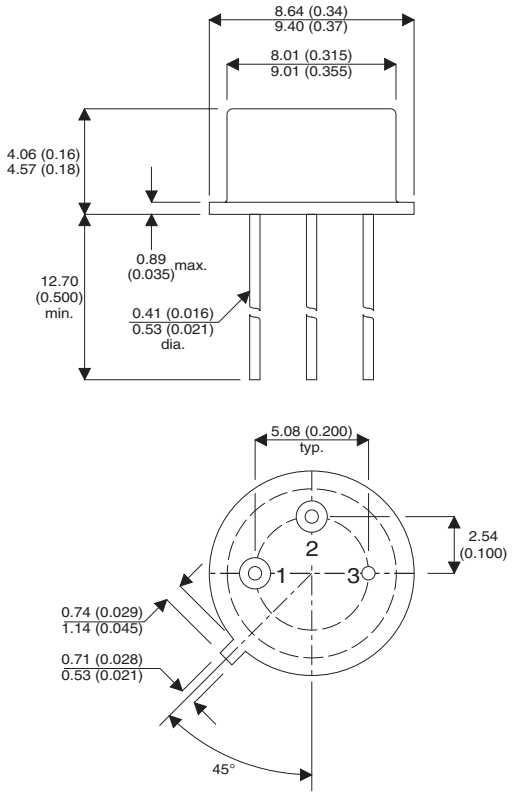
2N6845
IRFF9120

MECHANICAL DATA
Dimensions in mm (inches)



TO–39 (TO-205AF) METAL PACKAGE

PIN1 – Source PIN 2 – Gate PIN 3 – Drain

P–CHANNEL ENHANCEMENT MODE HIGH VOLTAGE POWER MOSFETS

V_{DSS} -100V
$I_{D(cont)}$ -4.0A
$R_{DS(on)}$ 0.60Ω

FEATURES

- **HERMETICALLY SEALED TO–39 METAL PACKAGE**
- **SIMPLE DRIVE REQUIREMENTS**
- **LIGHTWEIGHT**
- **SCREENING OPTIONS AVAILABLE**

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{GS}	Gate – Source Voltage		±20V
I_D	Continuous Drain Current	(V_{GS} = 0 , T_{case} = 25°C)	-4.0A
I_D	Continuous Drain Current	(V_{GS} = 0 , T_{case} = 100°C)	-2.6A
I_{DM}	Pulsed Drain Current [1]		-16A
P_D	Power Dissipation @ T_{case} = 25°C		20 W
	Linear Derating Factor		0.16 W/°C
T_J , T_{stg}	Operating and Storage Temperature Range		–55 to 150°C
T_L	Package Mounting Surface Temperature (for 5 sec)		300°C
$R_{\theta JC}$	Thermal Resistance Junction to Case		6.25°C/W

Notes

1) Repetitive Rating – Pulse width limited by maximum junction temperature.

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SEME LAB

2N6845
IRFF9120

ELECTRICAL CHARACTERISTICS (T_{amb} = 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 = - 1mA	- 100			V
$\frac{\Delta BV_{DSS}}{\Delta T_J}$	Temperature Coefficient of Breakdown Voltage	Reference to 25°C I_D = - 1mA		- 0.10		V/°C
$R_{DS(on)}$	Static Drain – Source On–State Resistance [1]	V_{GS} = - 10V I_D = - 2.6A			0.60	Ω
		V_{GS} = - 10V I_D = - 4.0A			0.69	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS} = V_{GS} I_D = -250µA	- 2		- 4	V
g_{fs}	Forward Transconductance [1]	V_{DS} > -15V I_D = -2.6A	1.25			S
I_{DSS}	Drain-to-Source Leakage Current	V_{DS} = - 80V V_{GS} = 0			-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		380		pF
C_{oss}	Output Capacitance	V_{DS} = - 25V		170		
C_{rss}	Reverse Transfer Capacitance	f = 1MHz		45		
Q_g	Total Gate Charge	V_{GS} = -10V I_D = -4.0A	4.3		16.3	nC
Q_{gs}	Gate – Source Charge	V_{DS} = -50V	1.3		4.7	
Q_{gd}	Gate – Drain (“Miller”) Charge		1.0		9.0	
$t_{d(on)}$	Turn–On Delay Time	V_{DD} = -50V			60	ns
t_r	Rise Time	I_D = - 4.0A			100	
$t_{d(off)}$	Turn–Off Delay Time	R_G = 7.5Ω			50	
t_f	Fall Time				70	
	SOURCE – DRAIN DIODE CHARACTERISTICS					
I_S	Continuous Source Current	Mosfet symbol showing the 			- 4.0	A
I_{SM}	Pulse Source Current	integral reverse p-n junction diode			- 16	
V_{SD}	Diode Forward Voltage[1]	I_S = - 4.0A T_J = 25°C V_{GS} = 0V			- 4.8	V
t_{rr}	Reverse Recovery Time[1]	I_F = -4.0A T_J = 25°C			200	ns
Q_{rr}	Reverse Recovery Charge[1]	$d_i / d_t \leq$ -100A/µs $V_{DD} \leq$ -50V			3.1	µC
t_{on}	Forward Turn–On Time			Negligible		

Notes

1) Pulse Test: Pulse Width ≤ 300ms, δ ≤ 2%

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