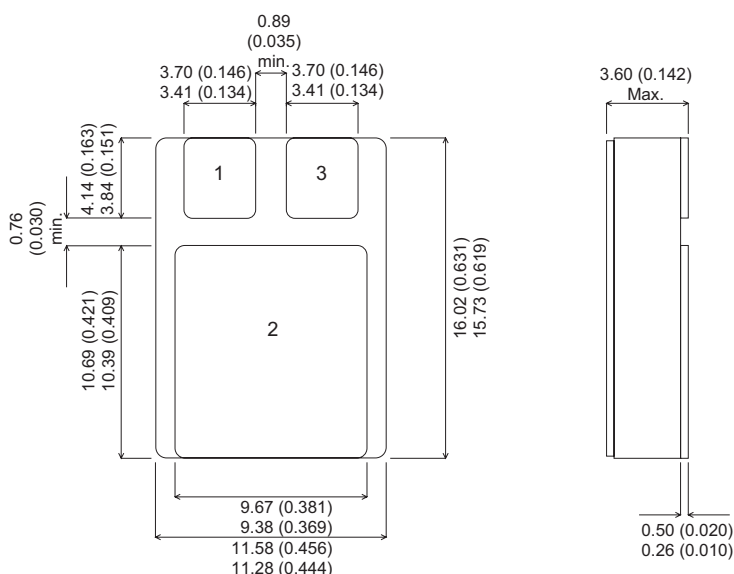


MECHANICAL DATA

Dimensions in mm (inches)


**N-CHANNEL
POWER MOSFET**

V_{DSS}	100V
$I_{D(cont)}$	45A
$R_{DS(on)}$	0.028Ω

FEATURES

- HERMETICALLY SEALED SURFACE MOUNT PACKAGE
- SMALL FOOTPRINT – EFFICIENT USE OF PCB SPACE.
- SIMPLE DRIVE REQUIREMENTS
- LIGHTWEIGHT
- HIGH PACKING DENSITIES

SMD 1 PACKAGE (TO-276AB)

Pad 1 – Source

Pad 2 – Drain

Pad 3 – Gate

Note: IRF3710SMD also available with pins 1 and 3 reversed.

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

V_{GS}	Gate – Source Voltage	±20V
I_D	Continuous Drain Current ($V_{GS} = 0$, $T_{case} = 25^{\circ}C$)	45A
I_D	Continuous Drain Current ($V_{GS} = 0$, $T_{case} = 100^{\circ}C$)	30A
I_{DM}	Pulsed Drain Current ¹	180A
P_D	Power Dissipation @ $T_{case} = 25^{\circ}C$	125W
	Linear Derating Factor	1.0W/°C
E_{AS}	Single Pulse Avalanche Energy ²	250mJ
dv/dt	Peak Diode Recovery ³	3.7V/ns
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	1.0°C/W

Notes 1) Pulse Test: Pulse Width $\leq 300ms$, $\delta \leq 2\%$

 2) @ $V_{DD} = 25V$, $L \geq 0.64mH$, Peak $I_{AS} = 28A$, $V_{GS} = 10V$, $R_G = 25\Omega$, Starting $T_J = 25^{\circ}C$

 3) @ $I_{SD} \leq 28A$, $di/dt \leq 390A/\mu s$, $V_{DD} \leq 100V$, $T_J \leq 150^{\circ}C$

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ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit	
STATIC ELECTRICAL RATINGS						
BV_{DSS}	Drain – Source Breakdown Voltage	$V_{GS} = 0$	$I_D = 250\mu\text{A}$	100	V	
ΔBV_{DSS}	Temperature Coefficient of Breakdown Voltage	Reference to 25°C		0.104	$\text{V}/^{\circ}\text{C}$	
$R_{DS(on)}$	Static Drain – Source On–State Resistance ¹	$V_{GS} = 10\text{V}$	$I_D = 28\text{A}$	0.028	Ω	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}$	$I_D = 250\mu\text{A}$	2.0	V	
g_{fs}	Forward Transconductance ¹	$V_{DS} = 15\text{V}$	$I_{DS} = 28\text{A}$	20	$\text{S}(\bar{\nu})$	
I_{DSS}	Zero Gate Voltage Drain Current	$V_{GS} = 0$	$V_{DS} = 80\text{V}$ $T_J = 125^{\circ}\text{C}$	25 250	μA	
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	nA	
DYNAMIC CHARACTERISTICS						
C_{iss}	Input Capacitance	$V_{GS} = 0$		2920	pF	
C_{oss}	Output Capacitance	$V_{DS} = 25\text{V}$		700		
C_{rss}	Reverse Transfer Capacitance	$f = 1\text{MHz}$		340		
Q_g	Total Gate Charge ¹	$V_{GS} = 10\text{V}$	$I_D = 28\text{A}$		200	nC
Q_{gs}	Gate – Source Charge ¹	$I_D = 28\text{A}$			28	nC
Q_{gd}	Gate – Drain (“Miller”) Charge ¹	$V_{GS} = 10\text{V}$	$V_{DS} = 80\text{V}$		94	
$t_{d(on)}$	Turn–On Delay Time	$V_{DD} = 50\text{V}$	$V_{GS} = 10\text{V}$		25	ns
t_r	Rise Time	$I_D = 28\text{A}$			86	
$t_{d(off)}$	Turn–Off Delay Time	$R_G = 2.5\Omega$			75	
t_f	Fall Time				54	
SOURCE – DRAIN DIODE CHARACTERISTICS						
I_S	Continuous Source Current			45	A	
I_{SM}	Pulse Source Current ²			180		
V_{SD}	Diode Forward Voltage	$I_S = 28\text{A}$	$T_J = 25^{\circ}\text{C}$	1.3	V	
t_{rr}	Reverse Recovery Time	$I_F = 28\text{A}$	$T_J = 25^{\circ}\text{C}$	280	ns	
Q_{rr}	Reverse Recovery Charge	$d_i / d_t \leq 100\text{A}/\mu\text{s}$	$V_{DD} \leq 50\text{V}$	2.0	μC	
t_{on}	Forward Turn–On Time			Negligible		

Notes

- 1) Pulse Test: Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$
- 2) Repetitive Rating – Pulse width limited by maximum junction temperature.

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