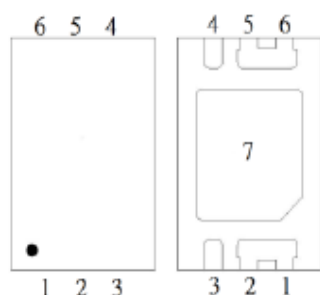


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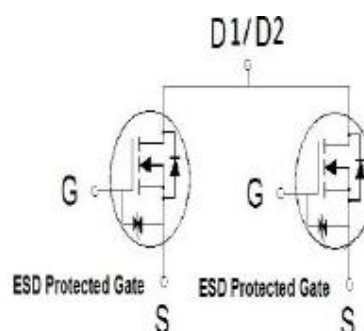
N-Channel Enhancement Mode MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
20V	13.5m Ω @ $V_{GS} = 10V$	10A



1,2:S1
3:G1
4:G2
5,6:S2
7:D1/D2



PDFN 2X3S

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^{\circ}\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 8	V
Continuous Drain Current	$T_A = 25\text{ }^{\circ}\text{C}$	I_D	10	A
	$T_A = 70\text{ }^{\circ}\text{C}$		8.2	
Pulsed Drain Current ¹		I_{DM}	40	
Avalanche Current		I_{AS}	17	
Avalanche Energy ³		E_{AS}	14.4	mJ
Power Dissipation	$T_A = 25\text{ }^{\circ}\text{C}$	P_D	2.3	W
	$T_A = 70\text{ }^{\circ}\text{C}$		1.4	
Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^{\circ}\text{C}$

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$R_{\theta JA}$		54	$^{\circ}\text{C} / \text{W}$

¹Pulse width limited by maximum junction temperature.

²The value of $R_{\theta JA}$ is measured with the device mounted on 1in² FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^{\circ}\text{C}$.

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ELECTRICAL CHARACTERISTICS ($T_J = 25^\circ\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNITS
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.35	0.8	1	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 8V$			± 30	μA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 16V, V_{GS} = 0V$			1	μA
		$V_{DS} = 10V, V_{GS} = 0V, T_J = 125\text{ }^{\circ}C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 4A$		12.5	13.5	m Ω
		$V_{GS} = 2.5V, I_D = 3.5A$		15.5	18	
DYNAMIC						
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 10V, f = 1MHz$		1184		pF
Output Capacitance	C_{oss}			135		
Reverse Transfer Capacitance	C_{rss}			108		
Total Gate Charge ²	Q_g	$V_{GS} = 4.5V,$ $V_{DS} = 10V, I_D = 4A$		12.8		nC
Gate-Source Charge ²	Q_{gs}			1.7		
Gate-Drain Charge ²	Q_{gd}			3.6		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DD} = 10V,$ $I_D \cong 4A, V_{GS} = 4.5V, R_{GS} = 6\Omega$		22		nS
Rise Time ²	t_r			34		
Turn-Off Delay Time ²	$t_{d(off)}$			51		
Fall Time ²	t_f			17		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_J = 25\text{ }^{\circ}C$)						
Continuous Current	I_S				1.9	A
Forward Voltage ¹	V_{SD}	$I_F = 4A, V_{GS} = 0V$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F = 4A, dI_F/dt = 100A / \mu S$		11		nS
Reverse Recovery Charge	Q_{rr}			3.8		nC

¹Pulse test : Pulse Width $\leq 300 \mu\text{sec}$, Duty Cycle $\leq 2\%$.

²Independent of operating temperature.

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Package Dimension

PDFN 2x3S MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	1.9		2.1	H		0.203	
B	2.9		3.1	I	0		0.05
C	0.7		0.9	J	0.4	0.5	0.6
D	1.4		1.6	K	0.2		0.3
E	1.4		1.7				
F	0.224		0.45				
G	0.2						

