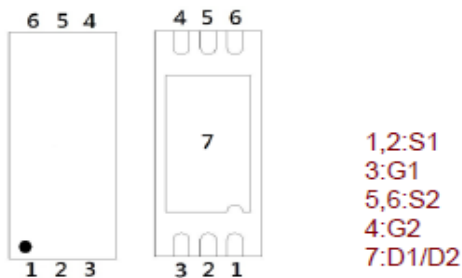


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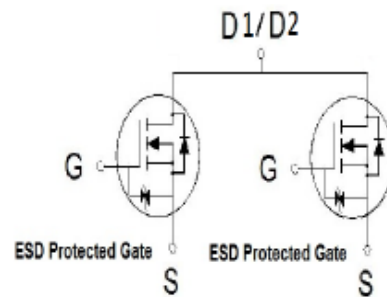
Dual Common Drain N-Channel MOSFET

PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
20V	10mΩ @ $V_{GS} = 4.5V$	12A



PDFN 2X5



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

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±10	
Continuous Drain Current ³	$T_A = 25\text{ °C}$	I_D	12	A
	$T_A = 70\text{ °C}$		9.8	
Pulsed Drain Current ¹		I_{DM}	40	
Avalanche Current		I_{AS}	23	
Avalanche Energy	$L = 0.1mH$	E_{AS}	26	mJ
Power Dissipation	$T_A = 25\text{ °C}$	P_D	2	W
	$T_A = 70\text{ °C}$		1.3	
Junction & Storage Temperature Range		T_J, T_{stg}	-55 to 150	°C

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Ambient ²	$R_{\theta JA}$		61	°C / 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 $T_A = 25\text{ °C}$.

³Package limitation current is 9.5A.

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Dual Common Drain N-Channel MOSFET

ELECTRICAL CHARACTERISTICS (T_J = 25 °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 = 250μA	20			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	0.35	0.7	1	
Gate-Body Leakage	I _{GSS}	V _{DS} = 0V, V _{GS} = ±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 °C			10	
Drain-Source On-State Resistance ¹	R _{DS(ON)}	V _{GS} = 4.5V, I _D = 3A	6.5	7.5	10	mΩ
		V _{GS} = 3.9V, I _D = 3A	6.6	7.6	12	
		V _{GS} = 3.1V, I _D = 2A	7	8	12.5	
		V _{GS} = 2.5V, I _D = 2A	7.5	8.5	13	
Forward Transconductance ¹	g _{fs}	V _{DS} = 5V, I _D = 3A		30		S
DYNAMIC						
Input Capacitance	C _{iss}	V _{GS} = 0V, V _{DS} = 10V, f = 1MHz		1735		pF
Output Capacitance	C _{oss}			283		
Reverse Transfer Capacitance	C _{rss}			245		
Total Gate Charge ²	Q _g	V _{DS} = 10V, I _D = 3A V _{GS} = 4.5V		24		nC
Gate-Source Charge ²	Q _{gs}			2		
Gate-Drain Charge ²	Q _{gd}			7		
Turn-On Delay Time ²	t _{d(on)}	V _{DD} = 10V I _D ≅ 3A, V _{GS} = 4.5V, R _{GS} = 6Ω		33		nS
Rise Time ²	t _r			51		
Turn-Off Delay Time ²	t _{d(off)}			76		
Fall Time ²	t _f			25		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T _J = 25 °C)						
Continuous Current	I _S				1.6	A
Forward Voltage ¹	V _{SD}	I _F = 3A, V _{GS} = 0V			1.2	V
Reverse Recovery Time	t _{rr}	I _F = 3A, dI _F /dt = 100A / μS		19		nS
Reverse Recovery Charge	Q _{rr}			10		nC

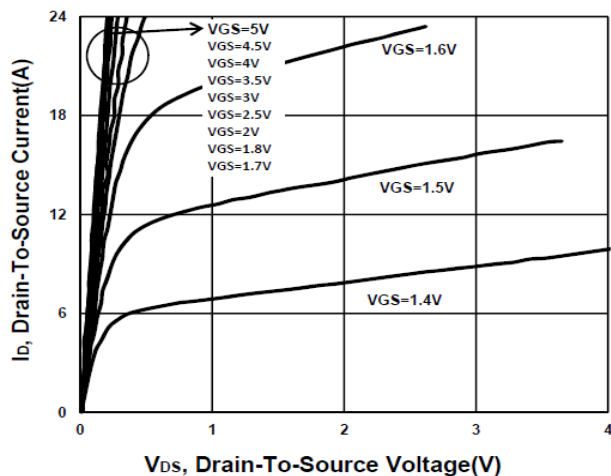
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

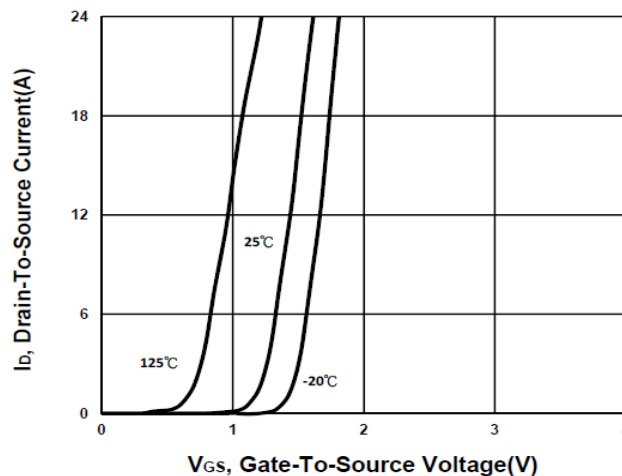
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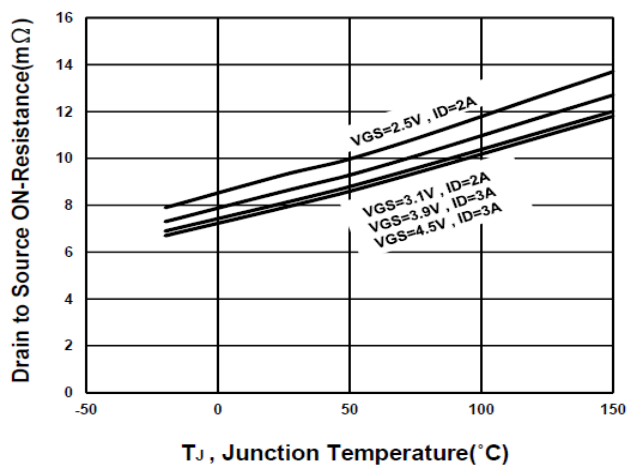
Output Characteristics



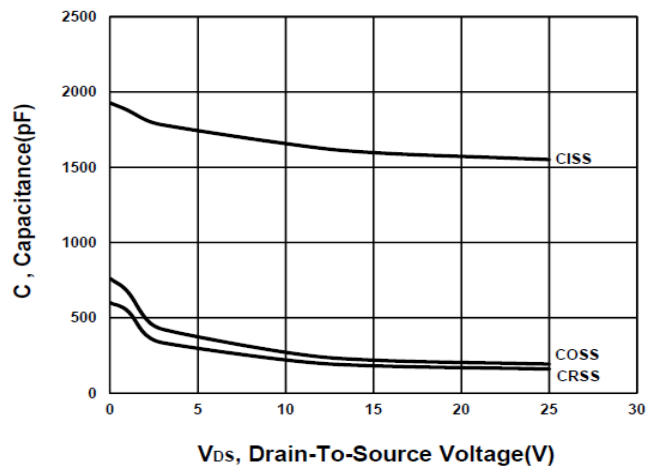
Transfer Characteristics



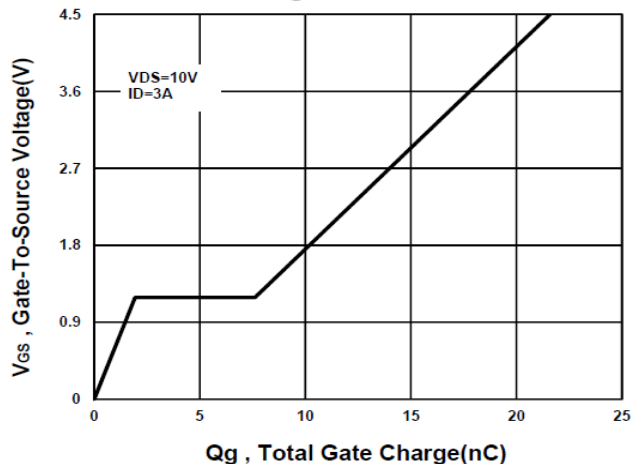
On-Resistance VS Temperature



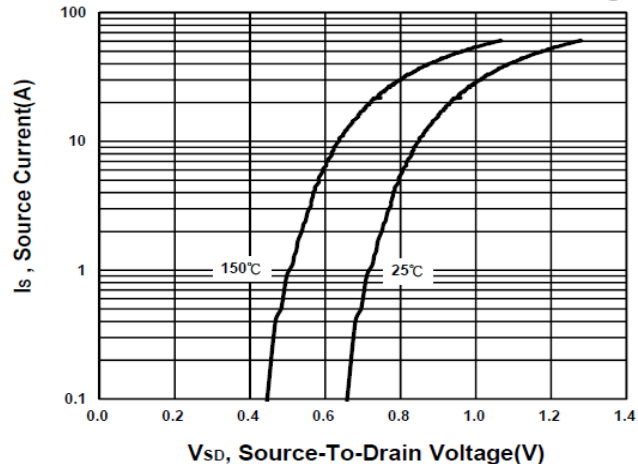
Capacitance Characteristic



Gate charge Characteristics



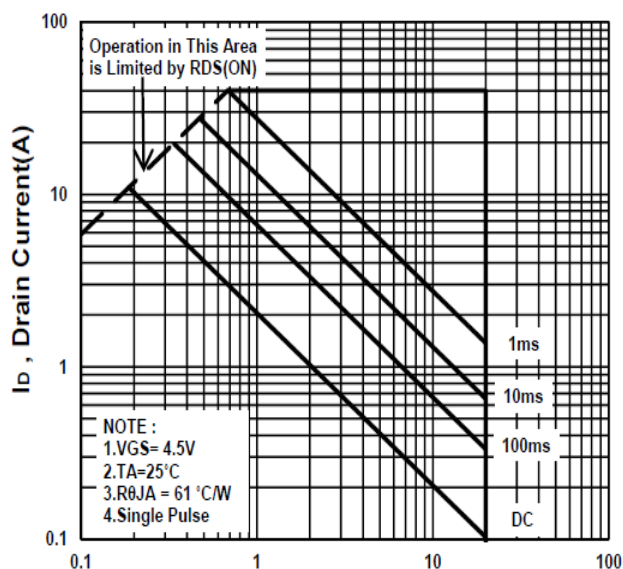
Source-Drain Diode Forward Voltage



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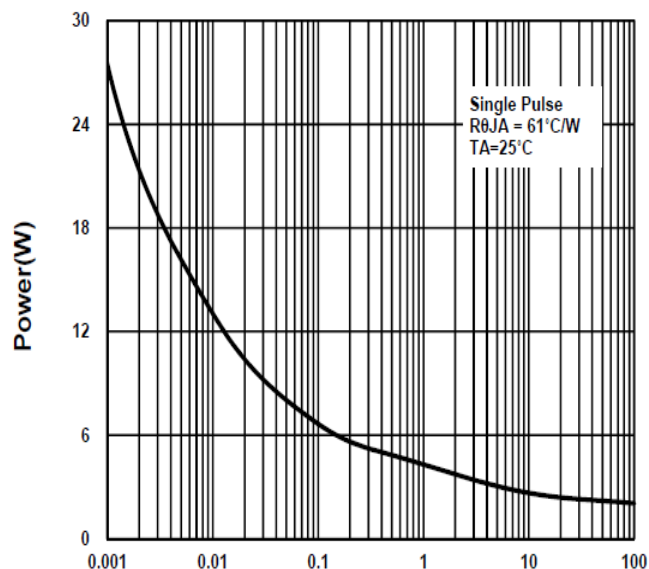
Dual Common Drain N-Channel MOSFET

Safe Operating Area



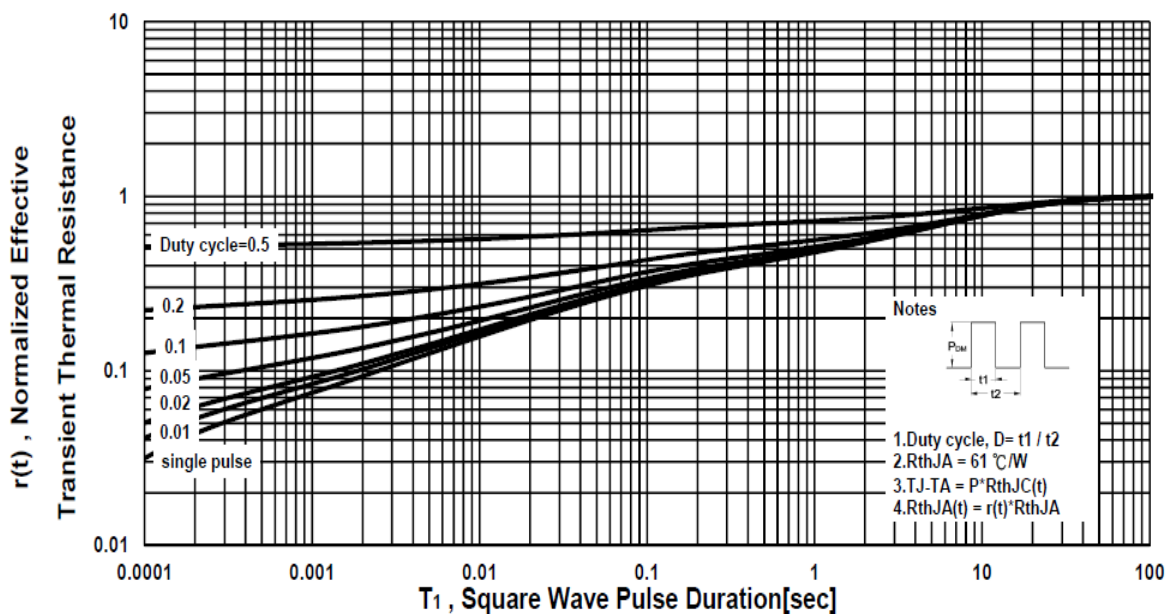
V_{DS}, Drain-To-Source Voltage(V)

Single Pulse Maximum Power Dissipation



Single Pulse Time(s)

Transient Thermal Response Curve



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Dual Common Drain N-Channel MOSFET

Package Dimension

PDFN 2x5 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.7		0.9	k	0.2		
A1	0		0.05	b	0.2		0.3
A3		0.203		e		0.5	
D	1.924		2.076	L	0.374		0.526
E	4.924		5.076				
D1	1.4		1.6				
E1	2.8		3				

