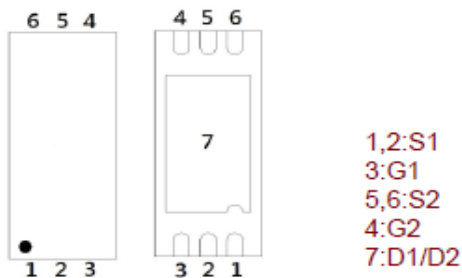


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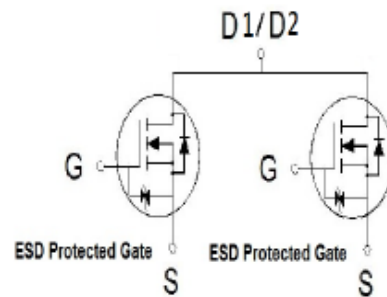
Dual Common Drain N-Channel MOSFET

PRODUCT SUMMARY

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



PDFN 2X5



ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ 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	$T_A = 25^\circ\text{C}$	I_D	12	A
	$T_A = 70^\circ\text{C}$		9.8	
Pulsed Drain Current ¹		I_{DM}	40	
Avalanche Current		I_{AS}	23	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	26	mJ
Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	2	W
	$T_A = 70^\circ\text{C}$		1.3	
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	$R_{\theta JA}$		61	$^\circ\text{C} / \text{W}$

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 $T_A = 25^\circ\text{C}$.

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	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	20			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.35	0.7	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
		$V_{DS} = 10V, V_{GS} = 0V, T_J = 125^\circ C$			10	
Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 3A$	6.5	7.5	10	m Ω
		$V_{GS} = 3.9V, I_D = 3A$	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	$t_{d(on)}$	$V_{DD} = 10V$ $I_D \cong 3A, V_{GS} = 4.5V, R_{GS} = 6\Omega$		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 ($T_J = 25^\circ C$)						
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}	$I_F = 3A, dI_F/dt = 100A / \mu S$		19		nS
Reverse Recovery Charge	Q_{rr}			10		nC

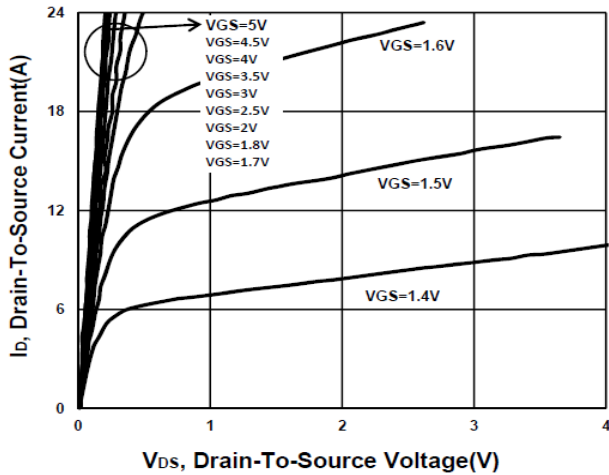
¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

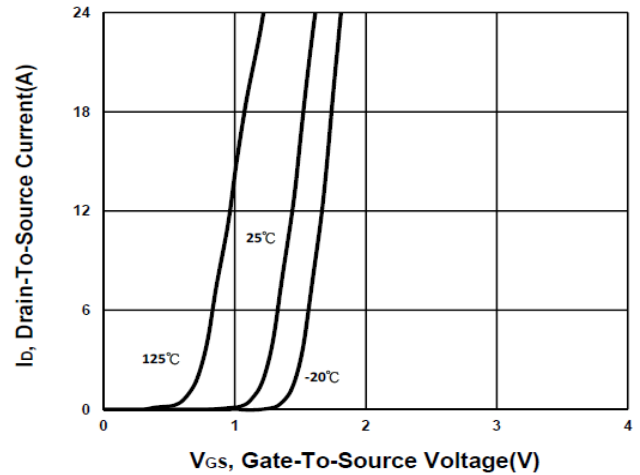
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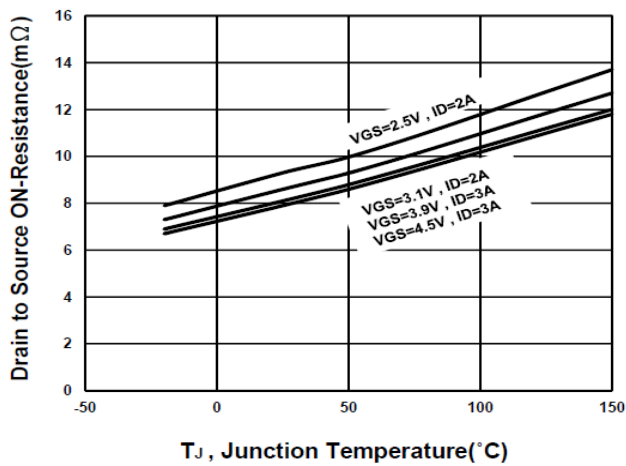
Output Characteristics



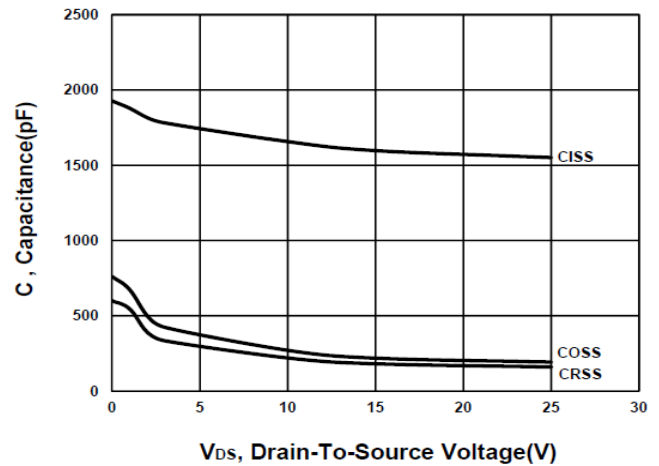
Transfer Characteristics



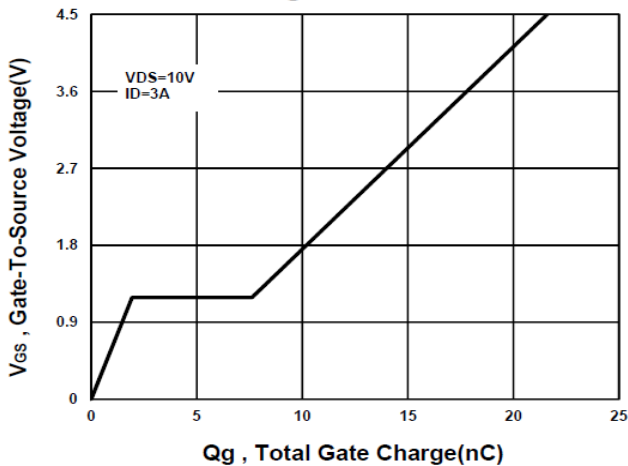
On-Resistance VS Temperature



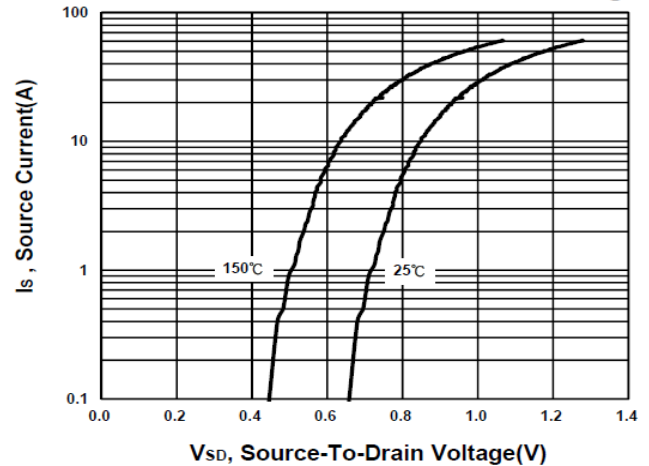
Capacitance Characteristic



Gate charge Characteristics



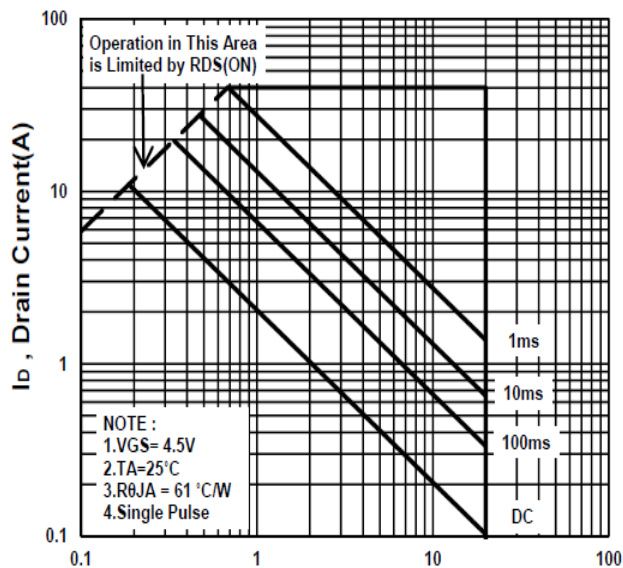
Source-Drain Diode Forward Voltage



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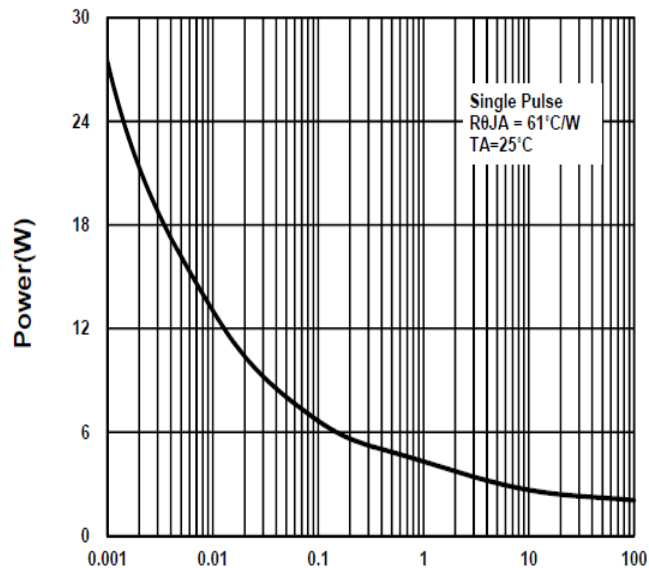
Dual Common Drain N-Channel MOSFET

Safe Operating Area



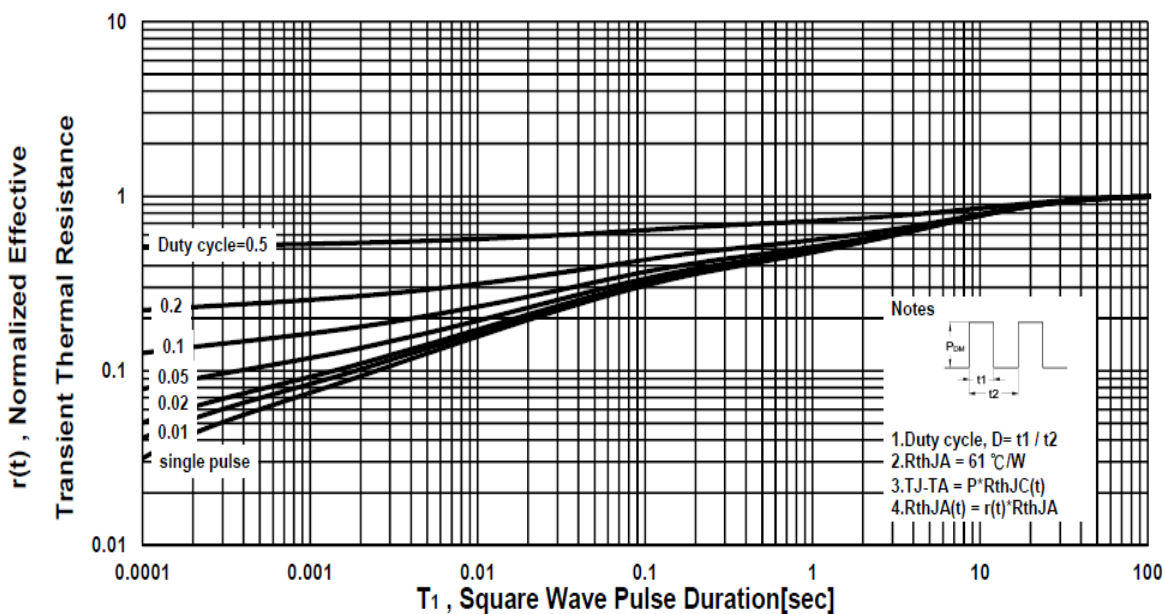
V_{DS}, Drain-To-Source Voltage(V)

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				

