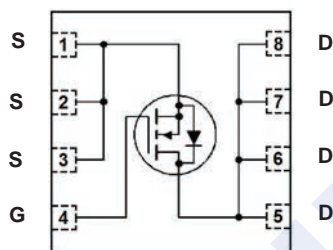


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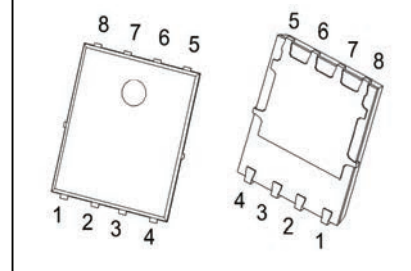
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■ Features

- $V_{DS} (V) = 75 V$
- $I_D = 65 A @ V_{GS}=10V$
- $R_{DS(ON)} < 8.25 m\Omega @ V_{GS} = 10 V$



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■ Absolute Maximum Ratings ($T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	V_{DS}	75	V	
Gate-Source Voltage	V_{GS}	± 25		
Continuous Drain Current	I_D	$T_c = 25^\circ C$	65	A
		$T_c = 100^\circ C$	45	
Pulsed Drain Current (Note 1)	I_{DM}	260		
Power Dissipation	P_D	78	W	
Single Pulse Avalanche Energy (Note 2)	EAS	120	mJ	
Thermal Resistance.Junction- to-Case (Note 3)	$R_{\theta JC}$	3.08	$^\circ C/W$	
Junction Temperature	T_J	175	$^\circ C$	
Storage Temperature Range	T_{stg}	-55 to 175		

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. EAS condition : $T_J=25^\circ C, V_{DD}=35V, V_G = 10V, R_G=25\Omega$
3. Surface Mounted on FR4 Board, $t \leq 10$ sec.

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■ Electrical Characteristics (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	BV _{DSS}	I _D = 250 μA, V _{GS} = 0V	75			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 70 V, V _{GS} = 0 V, T _C = 25°C			1	μA
		V _{DS} = 70 V, V _{GS} = 0 V, T _C = 125°C			10	
Gate to Source Leakage Current	I _{GSS}	V _{DS} = 0 V, V _{GS} = ±20 V			±100	nA
Gate to Source Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250 μA	2		4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} = 10 V, I _D = 40 A		7.0	8.25	mΩ
Forward Transconductance	g _{FS}	V _{DS} = 25 V, I _D = 40 A	110			S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{GS} = 0 V, V _{DS} = 25 V, f = 1 MHz		5884		pF
Output Capacitance	C _{oss}			860		
Reverse Transfer Capacitance	C _{rss}			476		
Turn-On Delay Time	t _{d(on)}	V _{DD} = 30V, I _D = 2A, R _L = 15Ω, V _{GS} = 10V, R _G = 2.5Ω		15		ns
Turn-On Rise Time	t _r			18		
Turn-Off Delay Time	t _{d(off)}			31		
Turn-Off Fall Time	t _f			38		
Gate Charge Characteristics						
Total Gate Charge	Q _g	V _{GS} = 10V, V _{DD} = 50 V, I _D = 40 A		106		nC
Gate Source Charge	Q _{gs}			19		
Gate Drain Charge	Q _{gd}			47.9		
Drain-Source Diode Characteristics (Note 1)						
Body Diode Reverse Recovery Time	t _{rr}	I _F = 75A, di/dt = 100 A/μs, T _J = 25°C		56		ns
Body Diode Reverse Recovery Charge	Q _{rr}			113		nC
Maximum Body-Diode Continuous Current	I _S				92	A
Maximum Body-Diode Pulsed Current	I _{SM}				368	
Diode Forward Voltage	V _{SD}	T _J = 25°C, I _{SD} = 40A, V _{GS} = 0V		0.8	0.95	V

Note 1. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 1.5%, R_G = 25 Ω, Starting T_J = 25°C

■ Marking

Marking	K5122 KC****
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■ Typical Electrical and Thermal Characteristics

Figure1. Output Characteristics

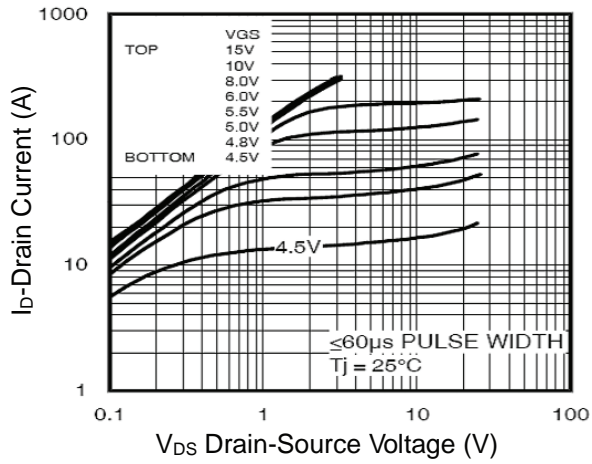


Figure2. Transfer Characteristics

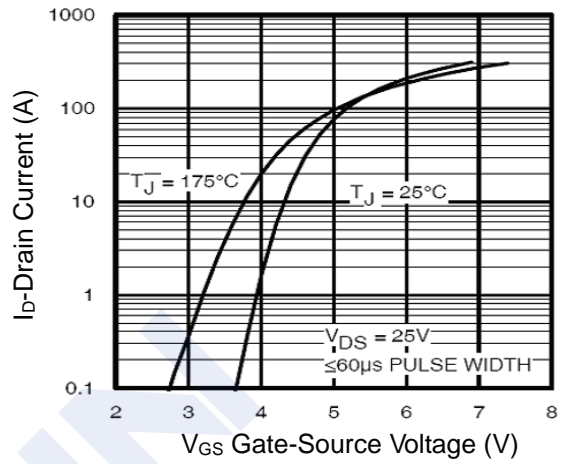


Figure3. Rdson Vs Drain Current

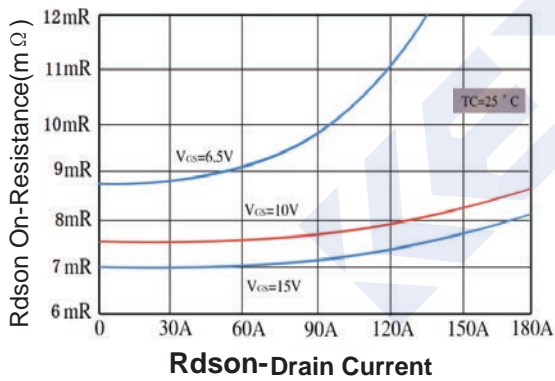


Figure4. Rdson Vs Junction Temperature

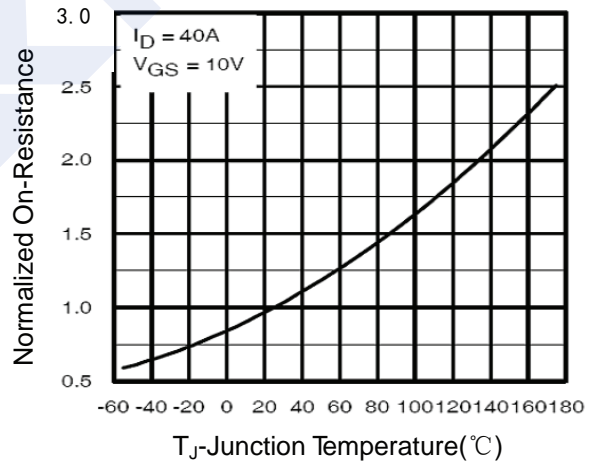


Figure5. Gate Charge

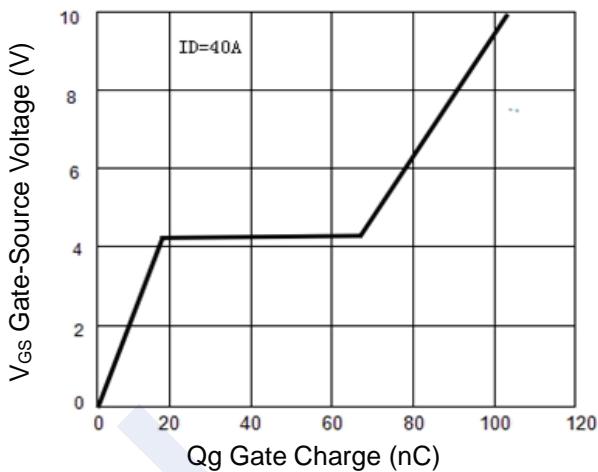
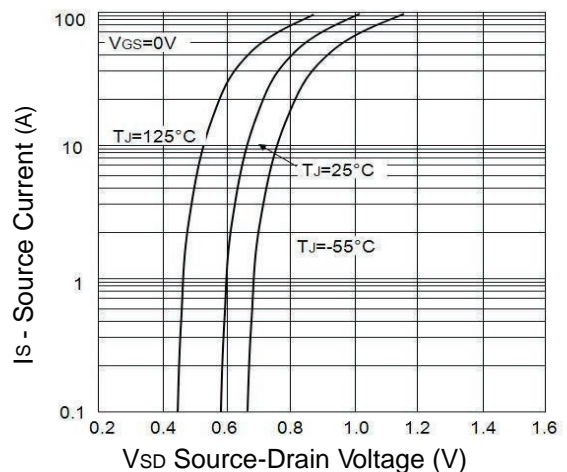


Figure6. Source- Drain Diode Forward



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Figure7. Capacitance vs Vds

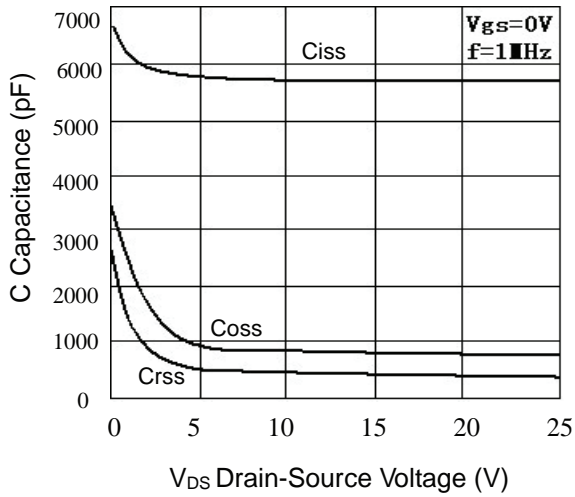


Figure8. Safe Operation Area

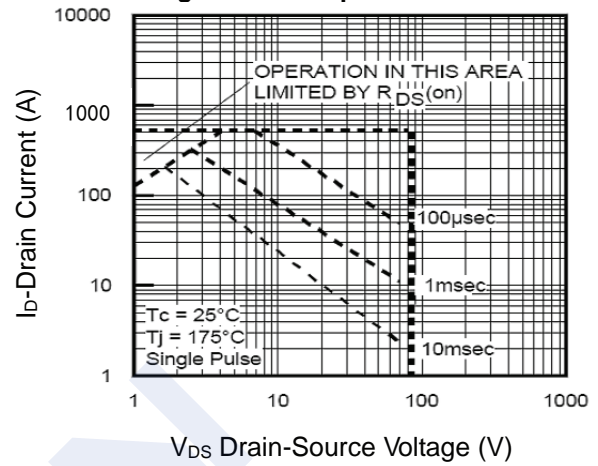


Figure9. BV_{DSS} vs Junction Temperature

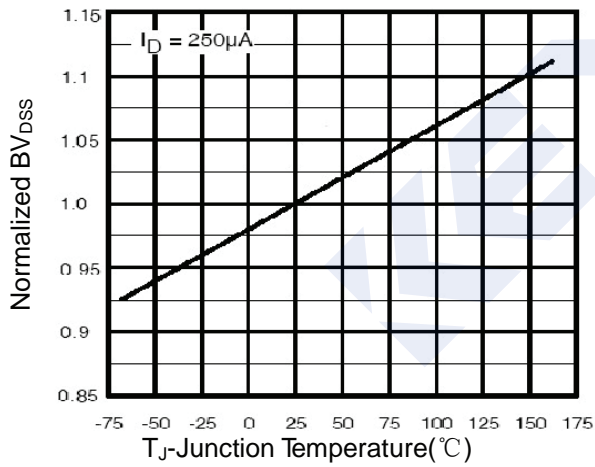


Figure10. VGS(th) vs Junction Temperature

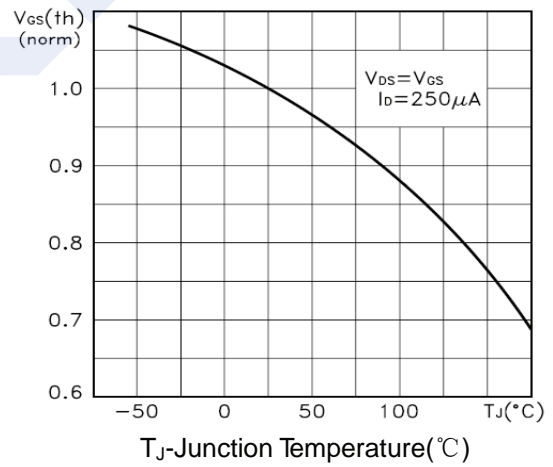
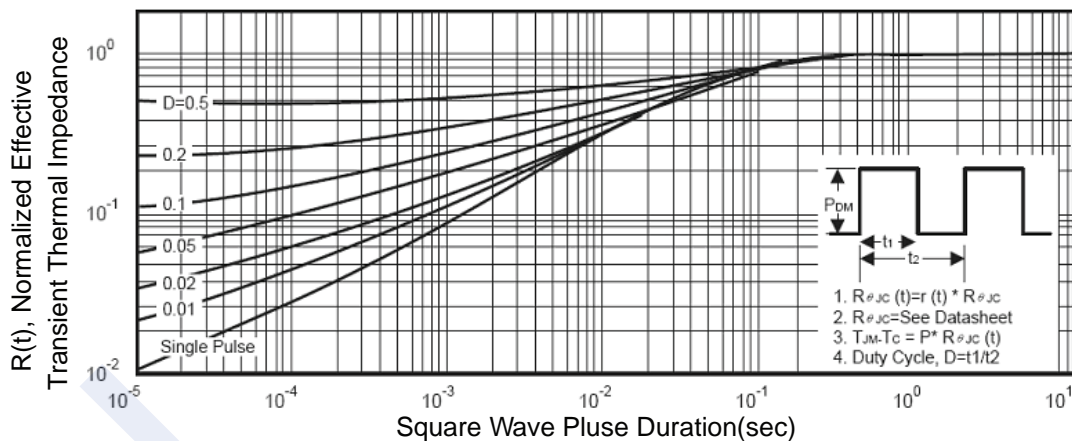


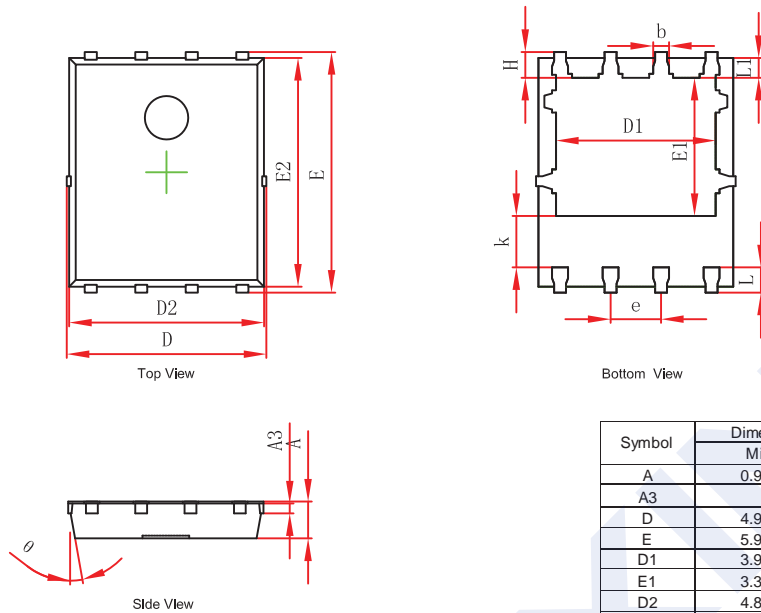
Figure11. Normalized Maximum Transient Thermal Impedance



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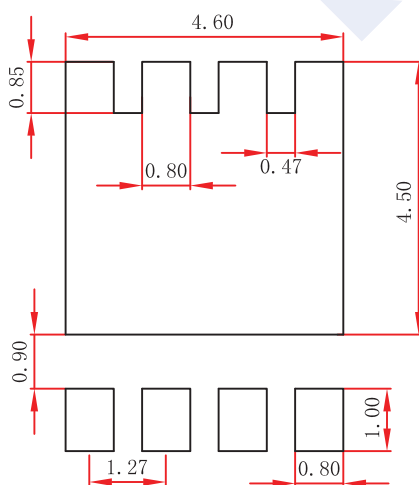
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PDFN5x6-8 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.000	0.035	0.039
A3	0.254REF.		0.010REF.	
D	4.944	5.096	0.195	0.201
E	5.974	6.126	0.235	0.241
D1	3.910	4.110	0.154	0.162
E1	3.375	3.575	0.133	0.141
D2	4.824	4.976	0.190	0.196
E2	5.674	5.826	0.223	0.229
k	1.190	1.390	0.047	0.055
b	0.350	0.450	0.014	0.018
e	1.270TYP.		0.050TYP.	
L	0.559	0.711	0.022	0.028
L1	0.424	0.576	0.017	0.023
H	0.574	0.726	0.023	0.029
θ	10°	12°	10°	12°

PDFN5x6-8 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only.