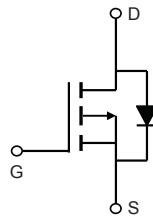
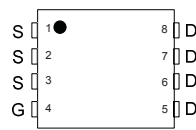


P-Channel MOSFET

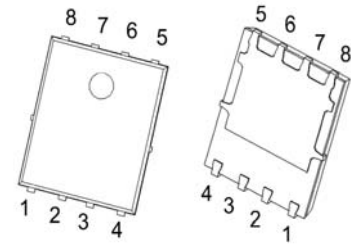
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■ Features

- V_{DS} -30V
- I_D -75A
- $R_{DS(ON)}$ (at $V_{GS} = -10V$) = 5.3m Ω (Typ.)
- $R_{DS(ON)}$ (at $V_{GS} = -4.5V$) = 8.4m Ω (Typ.)



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current $T_C=25^\circ\text{C}$	I_D	-75	A
Pulsed Drain Current $T_C=25^\circ\text{C}$	I_{DM}	-300	
Single Pulsed Avalanche Energy (Note 1)	E_{AS}	122	mJ
Power Dissipation $T_C=25^\circ\text{C}$	P_D	45	W
Power Dissipation $T_A=25^\circ\text{C}$		4.2	
Thermal Resistance, Junction- to-Ambient (Note 2)	$R_{\theta JA}$	30	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction- to-Case (Note 2)	$R_{\theta JC}$	2.8	
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	
Lead Temperature for Soldering Purposes (1/8" from case for 10s)	T_L	260	

Notes 1. EAS condition: $L=0.5\text{mH}$, $R_G=25\Omega$, $I_{AS} = -20\text{A}$, $V_{GS} = -10\text{V}$. Starting $T_J = 25^\circ\text{C}$

2. Mounted on a glass epoxy board of 50 mm x 50 mm x 0.8 mm

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■ Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off characteristics						
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = -250\mu\text{A}$, $V_{GS} = 0\text{V}$	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = -30\text{V}$, $V_{GS} = 0\text{V}$			-1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0\text{V}$, $V_{GS} = \pm 20\text{V}$			± 100	nA
On characteristics (note 1)						
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250\mu\text{A}$	-1.0		-2.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = -10\text{V}$, $I_D = -20\text{A}$		5.3	8	m Ω
		$V_{GS} = -4.5\text{V}$, $I_D = -20\text{A}$		8.4	13	
Dynamic characteristics (note 2)						
Input Capacitance	C_{iss}	$V_{GS}=0\text{V}$, $V_{DS} = -15\text{V}$, $f = 1\text{MHz}$		3770		pF
Output Capacitance	C_{oss}			545		
Reverse Transfer Capacitance	C_{rss}			395		
Switching characteristics (note 2)						
Total Gate Charge	Q_g	$V_{DS} = -15\text{V}$, $I_D = -20\text{A}$ $V_{GS} = -10\text{V}$		65		nC
Gate Source Charge	Q_{gs}			16.1		
Gate Drain Charge	Q_{gd}			18.1		
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = -15\text{V}$, $I_D = -20\text{A}$, $V_{GS} = -10\text{V}$, $R_G = 3\Omega$		14.4		ns
Turn-On Rise Time	t_r			11.2		
Turn-Off Delay Time	$t_{d(off)}$			99.5		
Turn-Off Fall Time	t_f			47.5		
Drain-Source Diode Characteristics						
Reverse Recovery Time	t_{rr}	$T_J = 25^\circ\text{C}$, $I_{SD} = -20\text{A}$, $V_{GS} = 0\text{V}$ $di/dt = -100\text{A}/\mu\text{s}$		37		nS
Reverse Recovery Charge	Q_{rr}			35		nC
Diode Forward Voltage	V_{SD}	$I_S = -20\text{A}$, $V_{GS} = 0\text{V}$		-0.8	-1.2	V

Notes 1. Pulse Test : Pulse Width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

2. Guaranteed by design, not subject to production.

■ Marking

Marking	J7116 KC***
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Typical Characteristics

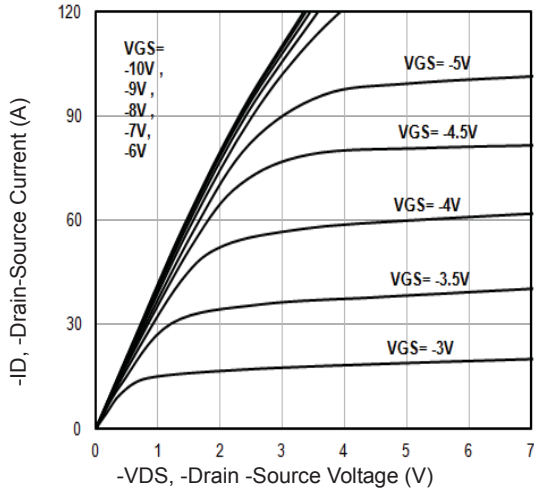


Fig1. Typical Output Characteristics

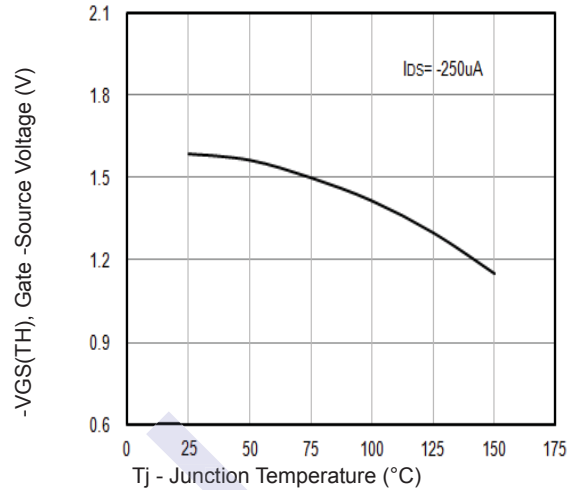


Fig2. $-V_{GS(TH)}$ Gate -Source Voltage Vs. T_j

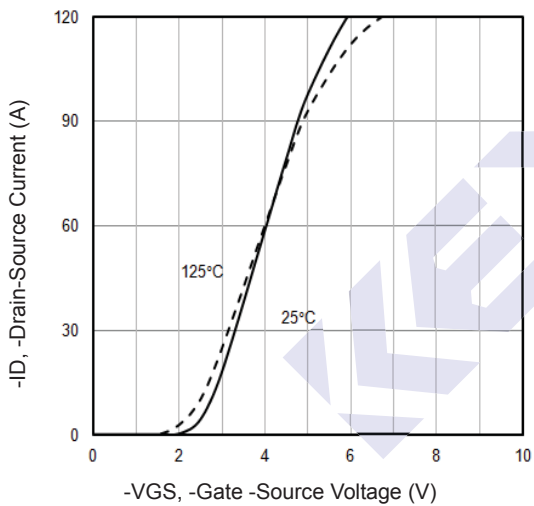


Fig3. Typical Transfer Characteristics

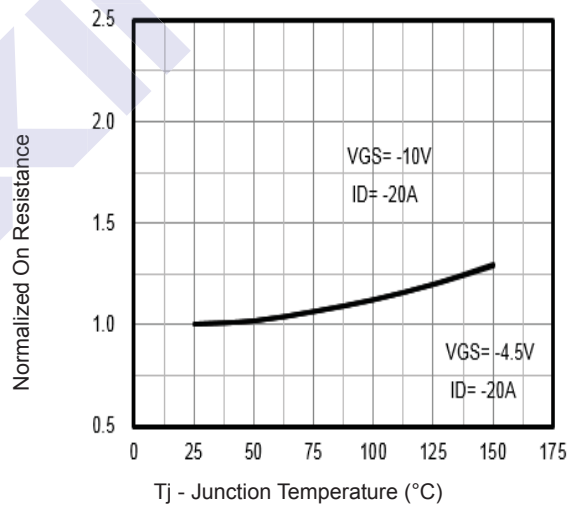


Fig4. Normalized On-Resistance Vs. T_j

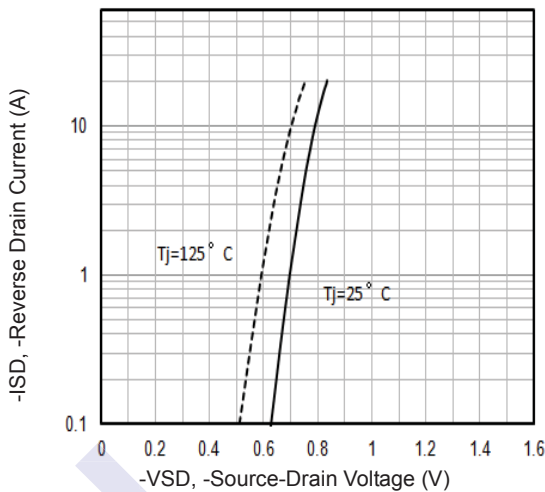


Fig5. Typical Source-Drain Diode Forward Voltage

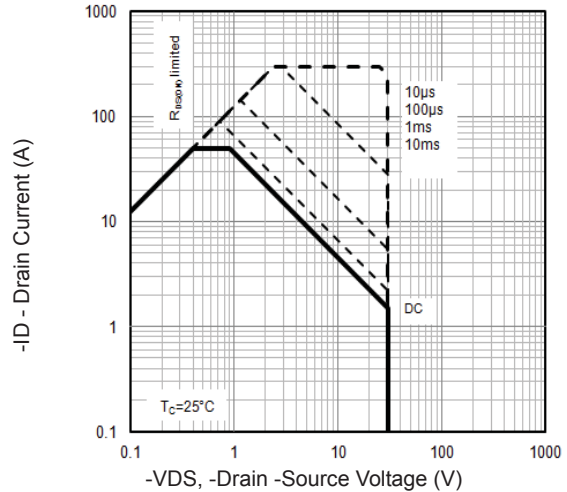


Fig6. Maximum Safe Operating Area

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Typical Characteristics

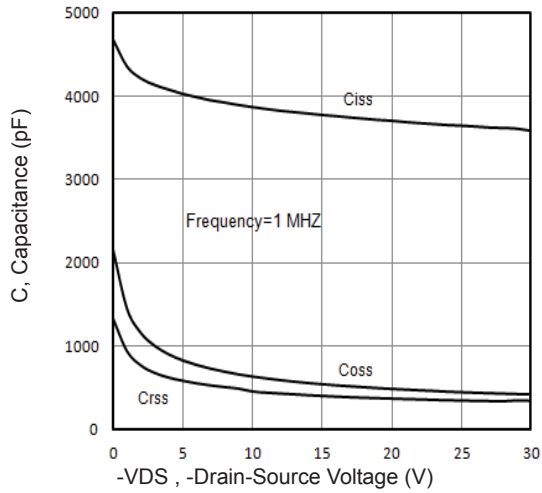


Fig7. Typical Capacitance Vs.Drain-Source Voltage

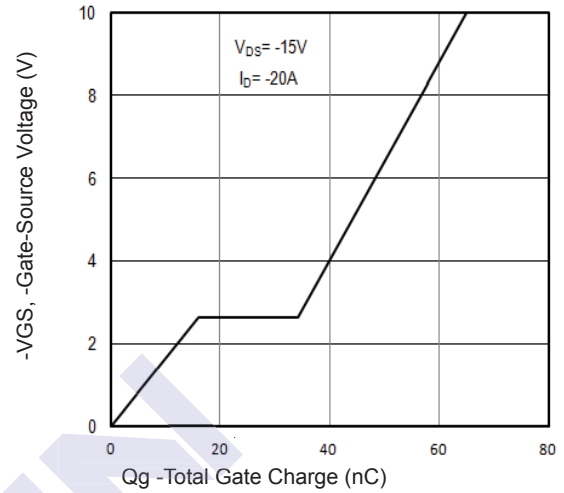


Fig8. Typical Gate Charge Vs.Gate-Source Voltage

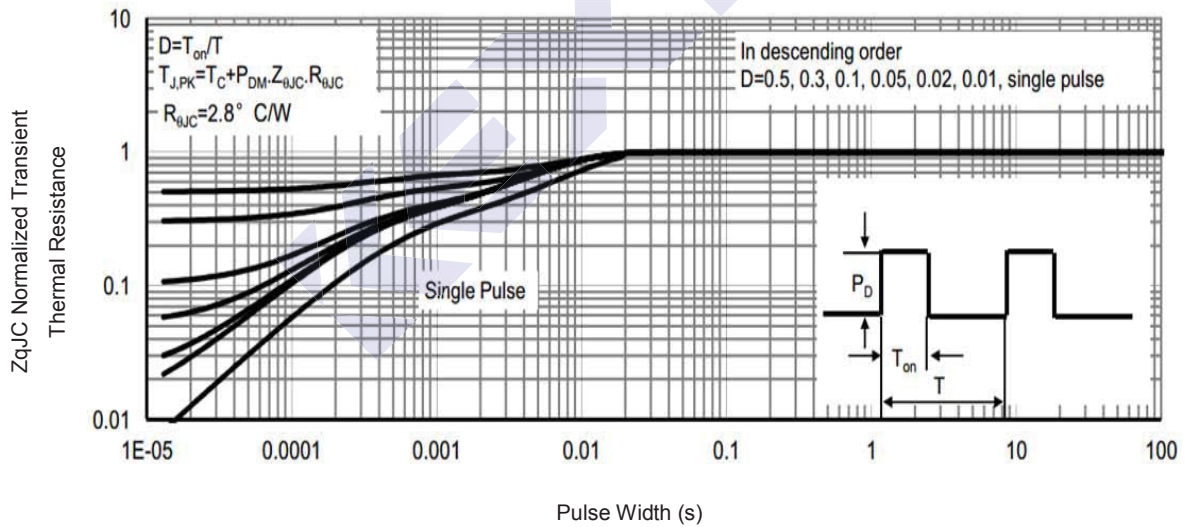


Fig9. Normalized Maximum Transient Thermal Impedance

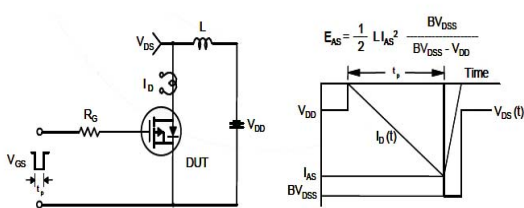


Fig10. Unclamped Inductive Test Circuit and Waveforms

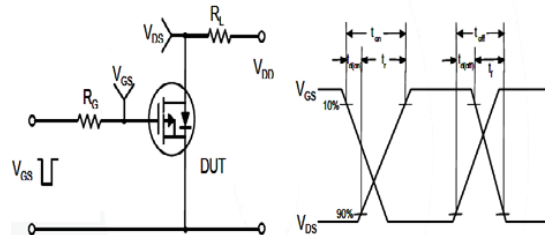
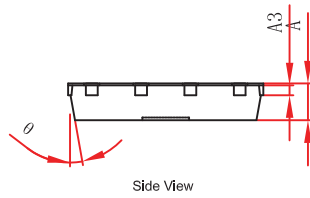
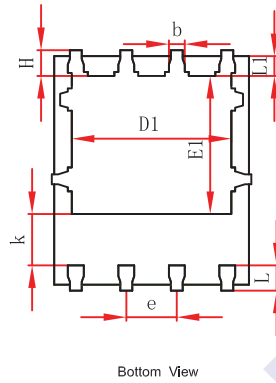
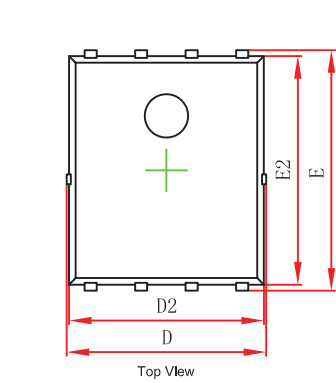


Fig11. Switching Time Test Circuit and waveforms

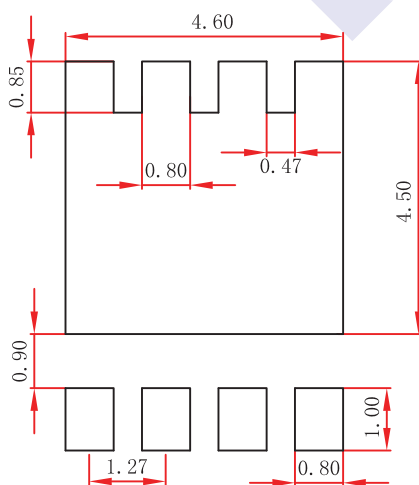
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PDFN5x6-8 Package Outline Dimensions



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.