P-Channel MOSFET

2KJ6029

■ Features

- $V_{DS\ (V)}$ = -100V
- I_D = -18A
- $R_{DS(ON)}$ < 100mΩ @ V_{GS} = -10V (Typ.:85mΩ)
- $R_{DS(ON)}$ < 120mΩ @ V_{GS} = -4.5V (Typ.:95mΩ)
- Super high dense cell design
- Advanced trench process technology
- Reliable and rugged
- High density cell design for ultra low On-Resistance

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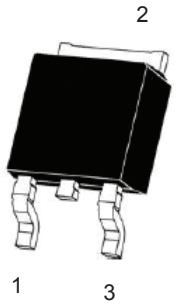

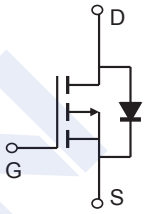

1. Gate (G)
2. Drain (D)
3. Source (S)

■ Absolute Maximum Ratings (Tc = 25℃ Unless otherwise noted)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-100	V
Gate-Source Voltage	V_{GS}	±20	
Continuous Drain Current	I_D	-18	A
Pulsed Drain Current	I_{DM}	-100	
Power Dissipation	P_D	70	W
Thermal Resistance, Junction- to-Case (Note 1)	$R_{\theta JC}$	1.79	℃/W
Junction Temperature	T_J	175	℃
Storage Temperature Range	T_{stg}	-55 to 175	

Note 1. Surface Mounted on FR4 Board, t ≤ 10 sec.

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■ Electrical Characteristics (T_C = 25℃ Unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA, V_{GS}=0V	-100			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-100V, V_{GS}=0V			-1	μA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=-250μA	-1	-1.9	-3	V
Static Drain-Source On-Resistance (Note 1)	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-16A		85	100	mΩ
		V_{GS}=-4.5V, I_D=-16A		95	120	
Forward Transconductance (Note 1)	g_{FS}	V_{DS}=-50V, I_D=-10A	5			S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-50V, f=1MHz		3810		pF
Output Capacitance	C_{oss}			129		
Reverse Transfer Capacitance	C_{rss}			125		
Total Gate Charge	Q_g	V_{DS}=-50V, I_D=-16A, V_{GS} = –10V		70		nC
Gate Source Charge	Q_{gs}			12.5		
Gate Drain Charge	Q_{gd}			15.5		
Turn-On DelayTime	$t_{d(on)}$	V_{DS}=-50V, I_D=-16A, V_{GS} = –10 V, $R_{G(ext)}$ = 9.1 Ω		16		ns
Turn-On Rise Time	t_r			73		
Turn-Off DelayTime	$t_{d(off)}$			34		
Turn-Off Fall Time	t_f			57		
Maximum Body-Diode Continuous Current	I_S				-18	A
Diode Forward Voltage	V_{SD}	I_{SD}=-10 A,V_{GS}=0V			-1.2	V
Reverse Recovery Time	t_{rr}	T_J = 25℃,I_F=-16A, di/dt = 100A/μs (Note 1)		88.3		nS
Reverse Recovery Charge	Q_{rr}			65.9		nC

Note 1. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

■ Marking

Marking	J6029 K****

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■Typical Electrical and Thermal Characteristics

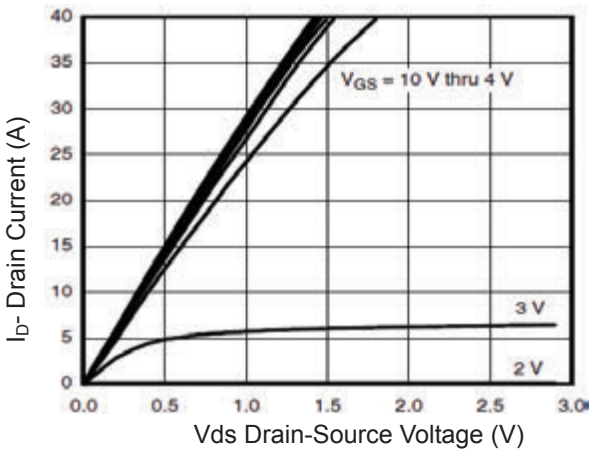

Figure 1 Output Characteristics

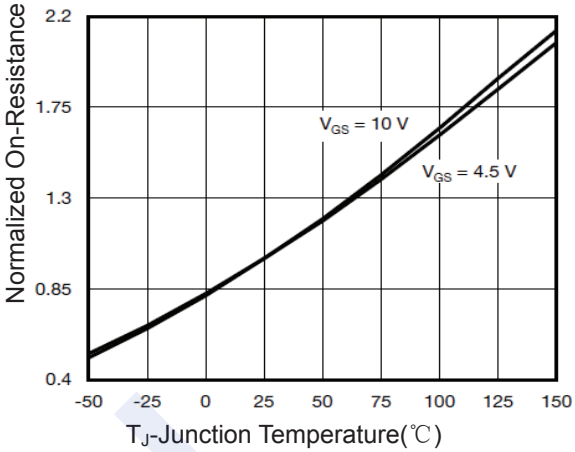

Figure 4 Rdson-JunctionTemperature

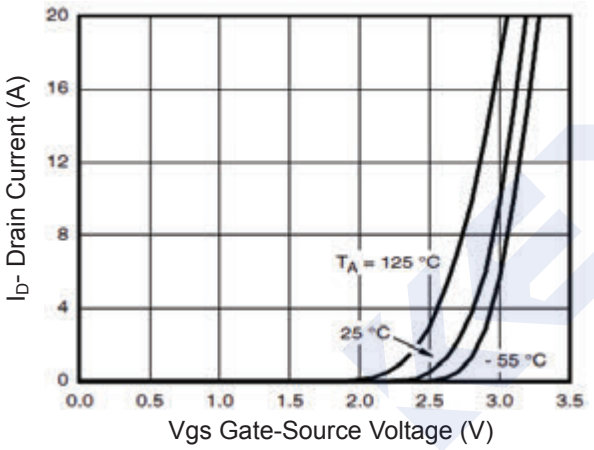

Figure 2 Transfer Characteristics

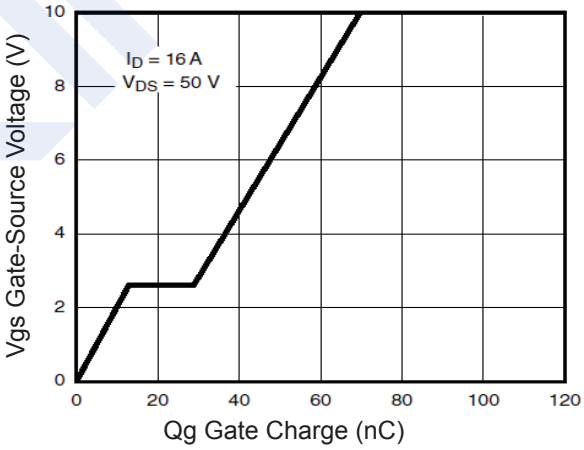

Figure 5 Gate Charge

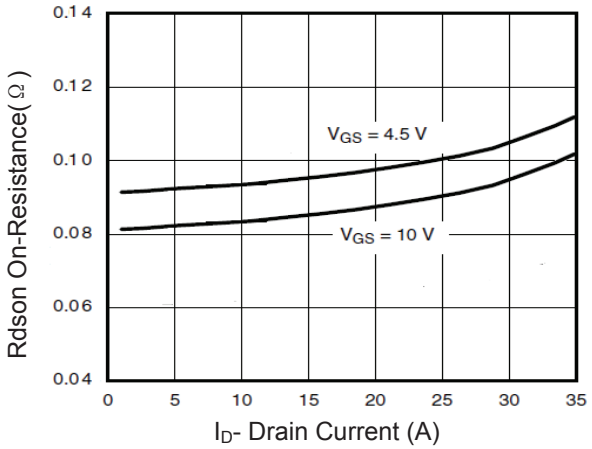

Figure 3 Rdson- Drain Current

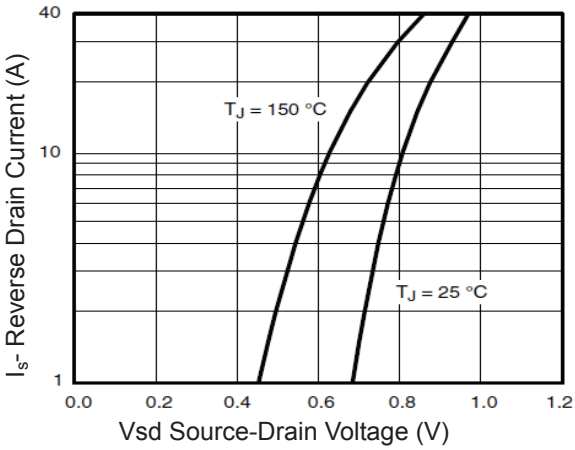

Figure 6 Source- Drain Diode Forward

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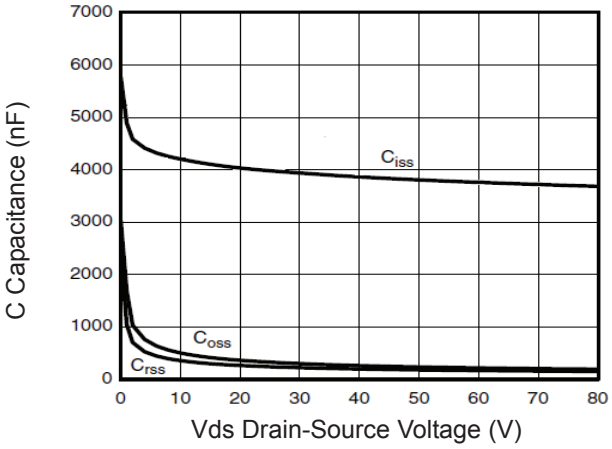

Figure 7 Capacitance vs Vds

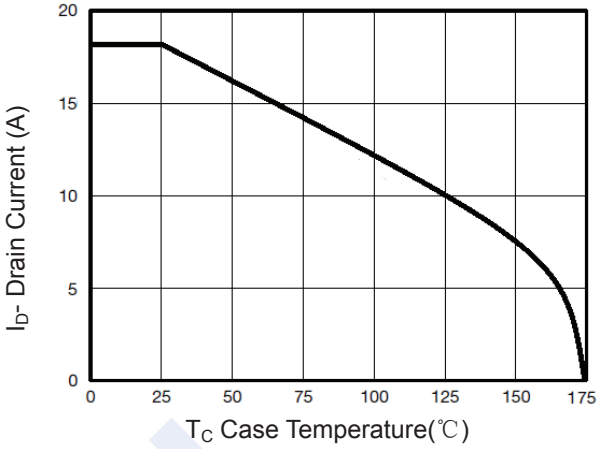

Figure 9 Drain Current vs Case Temperature

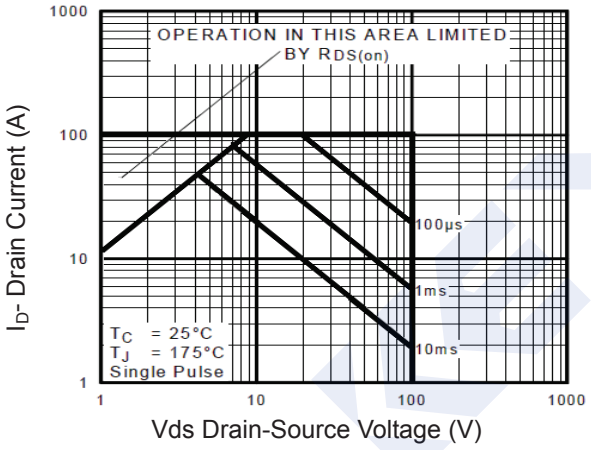

Figure 8 Safe Operation Area

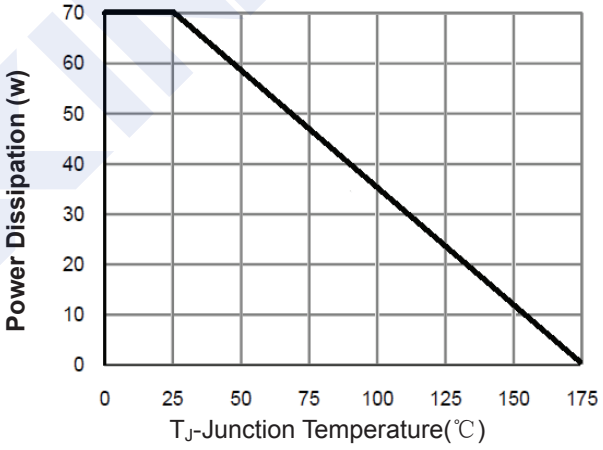

Figure 10 Power De-rating

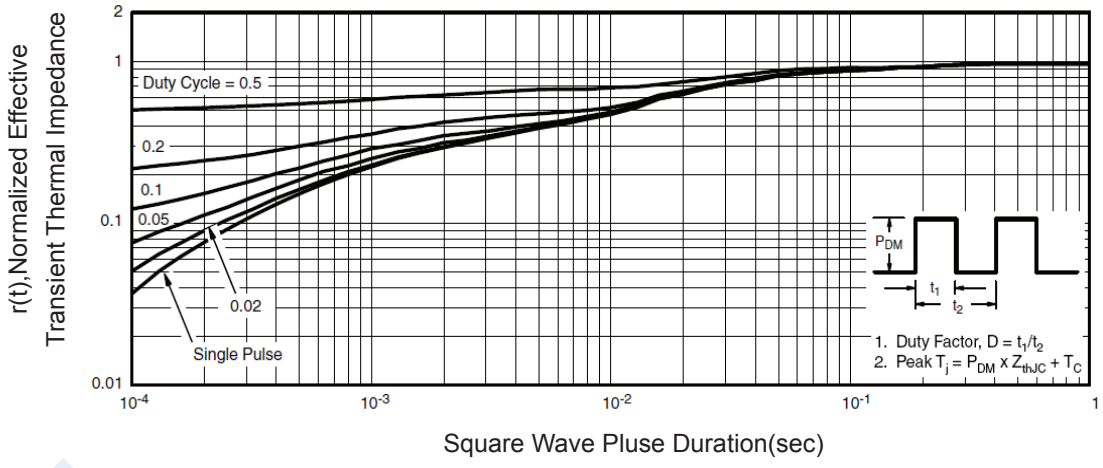

Figure 11 Normalized Maximum Transient Thermal Impedance

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■ Package Dimension

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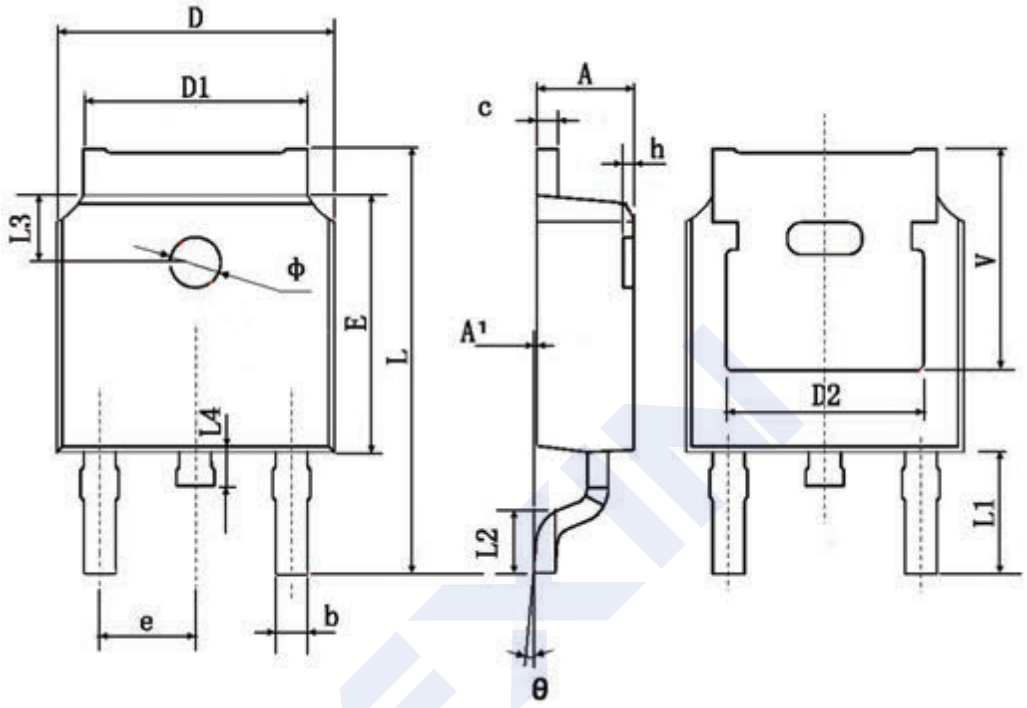

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.660	0.860	0.026	0.034
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 TYP.		0.190 TYP.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 TYP.		0.114 TYP.	
L2	1.400	1.700	0.055	0.067
L3	1.600 TYP.		0.063 TYP.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.350 TYP.		0.211 TYP.	