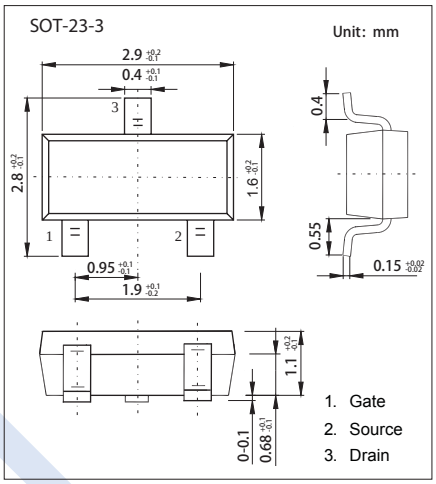
P-Channel MOSFET

2KJ6032



■ Features

- V_{DS} (V) = -30V
- I_D = -6.0A
- $R_{DS(ON)}$ = 35 mΩ (typ.) @VGS = -10 V
- $R_{DS(ON)}$ = 44 mΩ (typ.) @VGS = -4.5 V

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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current, t ⩽ 5 s	*1	I_D	-6.0	A
Pulsed Drain Current (tp⩽10μs)		I_{DM}	-24	
Power Dissipation	*1	P_D	1210	mW
Thermal Resistance, Junction- to-Ambient	in free air *2	$R_{\theta JA}$	244	℃/W
	in free air *1		104	
	in free air; t ⩽ 5 s *1		64	
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

*1. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated, mounting pad for drain 6 cm^2.
*2. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=-250μA, V_{GS}=0V	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V, 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	-0.5		-1.1	V
Static Drain-Source On-Resistance (Note 1)	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-5A		35	42	mΩ
		V_{GS}=-4.5V, I_D=-4A		44	53	
Forward Transconductance (Note 1)	g_{FS}	V_{DS}=-5V, I_D=-4A		17		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-15V, f=1MHz		645		pF
Output Capacitance	C_{oss}			80		
Reverse Transfer Capacitance	C_{rss}			55		
Total Gate Charge	Q_g	V_{DS}=-15V, I_D=-4A, V_{GS} = –10V		14		nC
Gate Source Charge	Q_{gs}			1.5		
Gate Drain Charge	Q_{gd}			2.5		
Turn-On DelayTime	$t_{d(on)}$	V_{DS}=-15V, R_L = 3.75 Ω V_{GS} = –10 V, R_{GEN} = 3 Ω		6.5		ns
Turn-On Rise Time	t_r			3.5		
Turn-Off DelayTime	$t_{d(off)}$			41		
Turn-Off Fall Time	t_f			9		
Diode Forward Voltage	V_{SD}	I_{SD}=-1 A,V_{GS}=0V			-1.2	V

Note1: Pulse test.

■ Marking

Marking	JAR

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■ Typical Characterisitics and Thermal Characteristics

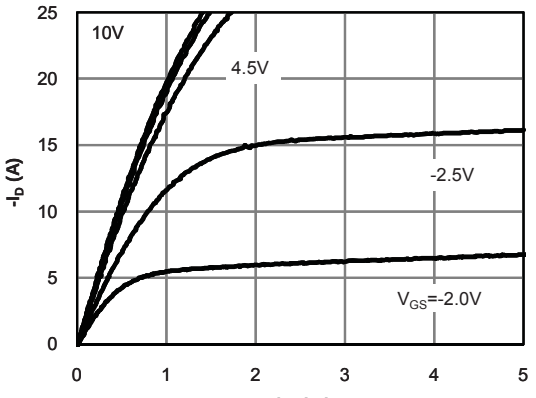

Fig 1: On-Region Characteristics

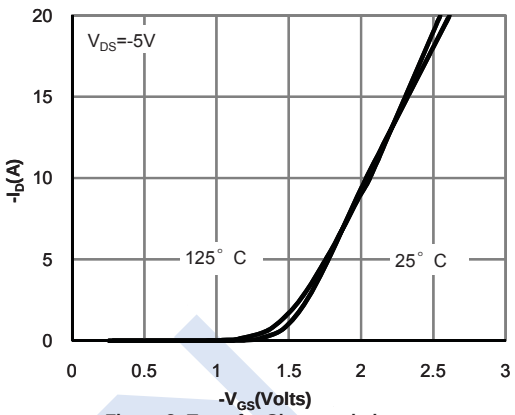

Figure 2: Transfer Characteristics

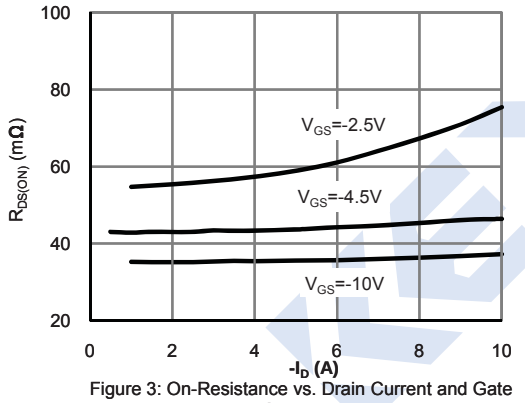

Figure 3: On-Resistance vs. Drain Current and Gate Voltage

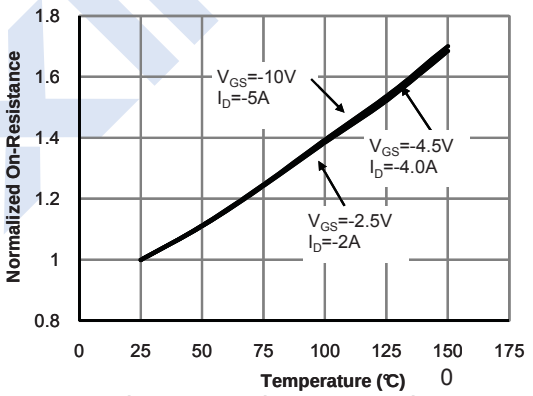

Figure 4: On-Resistance vs. Junction Temperature

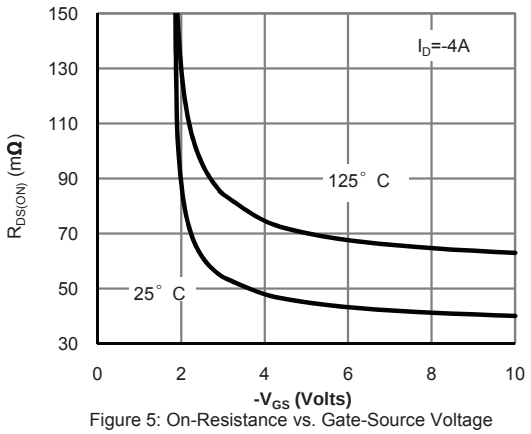

Figure 5: On-Resistance vs. Gate-Source Voltage

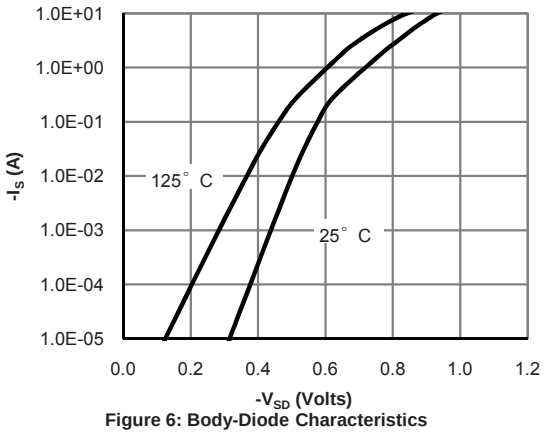

Figure 6: Body-Diode Characteristics

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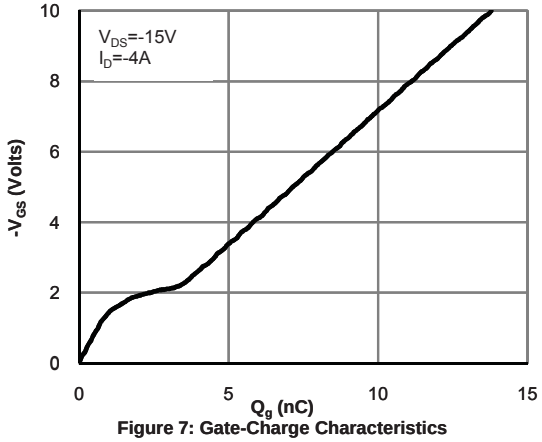

Figure 7: Gate-Charge Characteristics

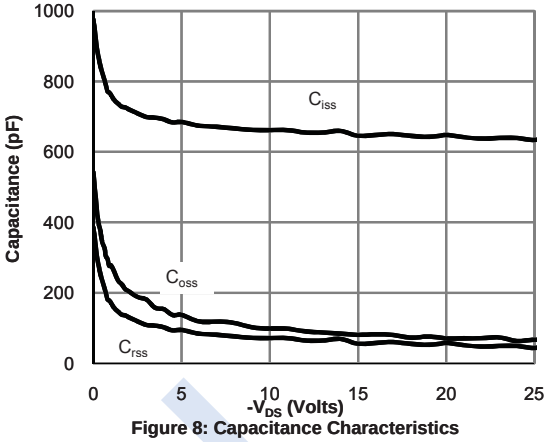

Figure 8: Capacitance Characteristics

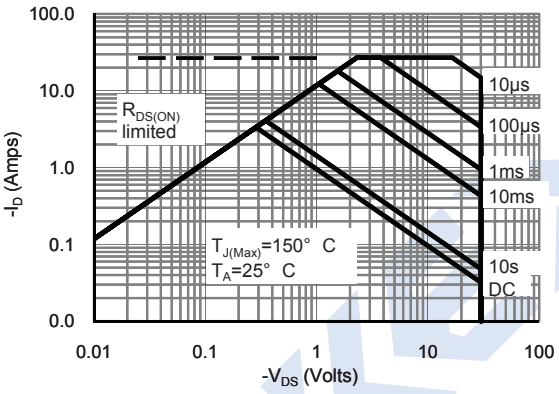

Figure 9: Maximum Forward Biased Safe Operating Area

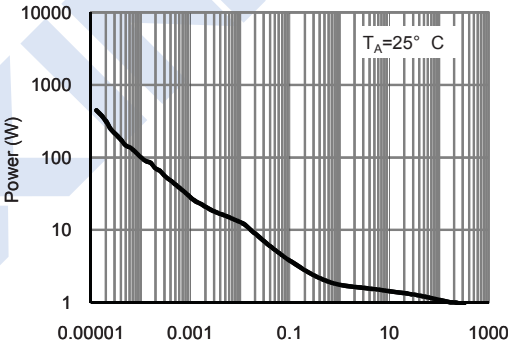

Figure 10: Single Pulse Power Rating Junction-to-Ambient

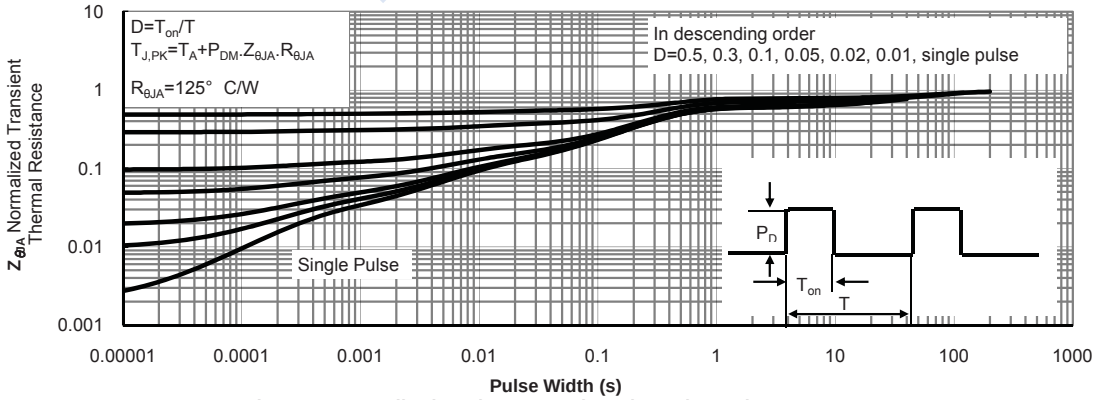

Figure 11: Normalized Maximum Transient Thermal Impedance