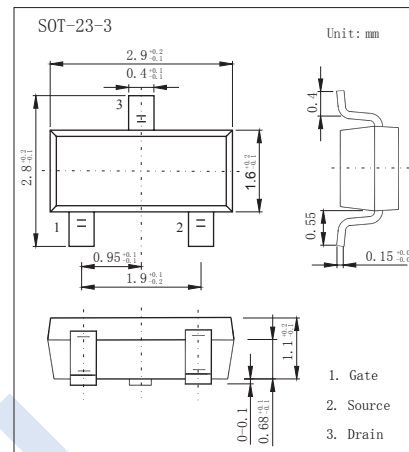


P-Channel MOSFET

2KJ6034

■ Features

- V_{DS} (V) = -30V
- I_D = -6.2A
- $R_{DS(ON)}$ = 26 m Ω (typ.) @ V_{GS} = -10 V
- $R_{DS(ON)}$ = 32 m Ω (typ.) @ V_{GS} = -4.5 V

■ 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, $t \leq 5$ s ^{*1}	I_D	-6.2	A	
Pulsed Drain Current ($t_p \leq 10\mu\text{s}$)	I_{DM}	-24		
Power Dissipation ^{*1}	P_D	1210	mW	
Thermal Resistance, Junction- to-Ambient	$R_{\theta JA}$	in free air ^{*2}	244	$^\circ\text{C}/\text{W}$
		in free air ^{*1}	104	
		in free air; $t \leq 5$ s ^{*1}	64	
Junction Temperature	T_J	150	$^\circ\text{C}$	
Junction 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 cm².

*2. Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D = -250\mu\text{A}$, $V_{GS} = 0\text{V}$	-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
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}$, $I_D = -250\mu\text{A}$	-0.5		-1.1	V
Static Drain-Source On-Resistance (Note 1)	$R_{DS(on)}$	$V_{GS} = -10\text{V}$, $I_D = -6.2\text{A}$		26	34	m Ω
		$V_{GS} = -4.5\text{V}$, $I_D = -4\text{A}$		32	42	
Forward Transconductance (Note 1)	g_{FS}	$V_{DS} = -5\text{V}$, $I_D = -4\text{A}$		17		S
Input Capacitance	C_{iss}	$V_{GS} = 0\text{V}$, $V_{DS} = -15\text{V}$, $f = 1\text{MHz}$		645		pF
Output Capacitance	C_{oss}			80		
Reverse Transfer Capacitance	C_{rss}			55		
Total Gate Charge	Q_g	$V_{DS} = -15\text{V}$, $I_D = -4\text{A}$, $V_{GS} = -10\text{V}$		14		nC
Gate Source Charge	Q_{gs}			1.5		
Gate Drain Charge	Q_{gd}			2.5		
Turn-On Delay Time	$t_{d(on)}$	$V_{DS} = -15\text{V}$, $R_L = 3.75\ \Omega$ $V_{GS} = -10\text{V}$, $R_{GEN} = 3\ \Omega$		6.5		ns
Turn-On Rise Time	t_r			3.5		
Turn-Off Delay Time	$t_{d(off)}$			41		
Turn-Off Fall Time	t_f			9		
Diode Forward Voltage	V_{SD}	$I_{SD} = -1\text{A}$, $V_{GS} = 0\text{V}$			-1.2	V

Note1: Pulse test.

■ Marking

Marking	JAT/**
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P-Channel MOSFET

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Typical Characteristics and Thermal Characteristics

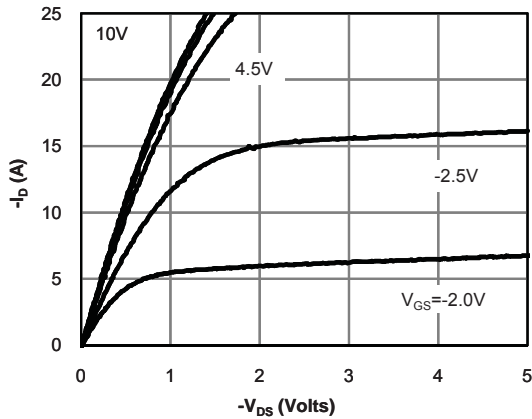


Fig 1: On-Region Characteristics

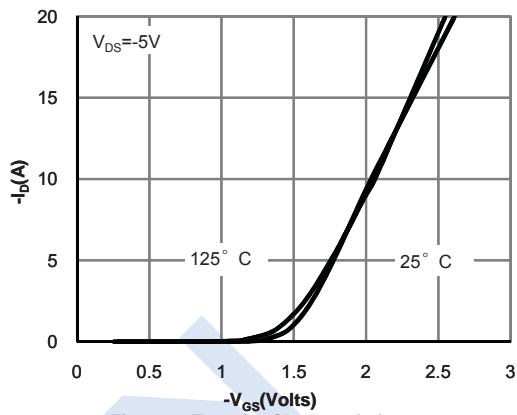


Figure 2: Transfer Characteristics

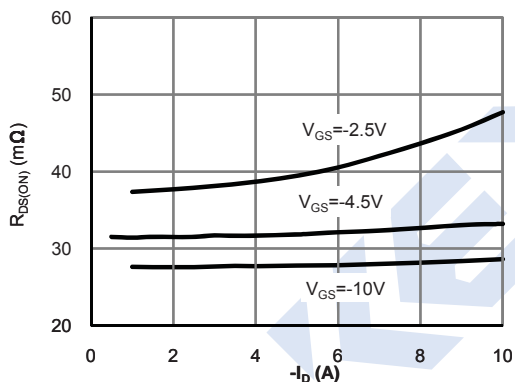


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

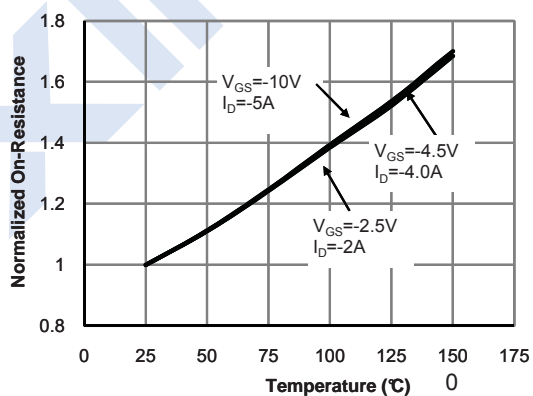


Figure 4: On-Resistance vs. Junction Temperature

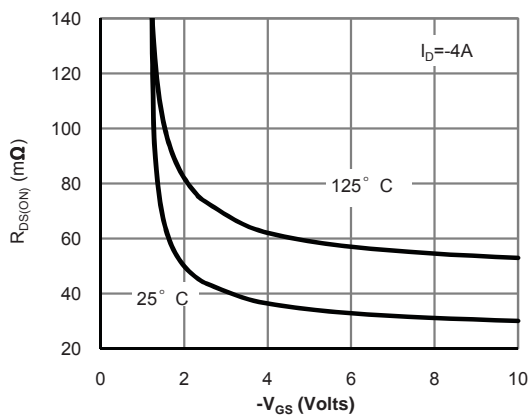


Figure 5: On-Resistance vs. Gate-Source Voltage

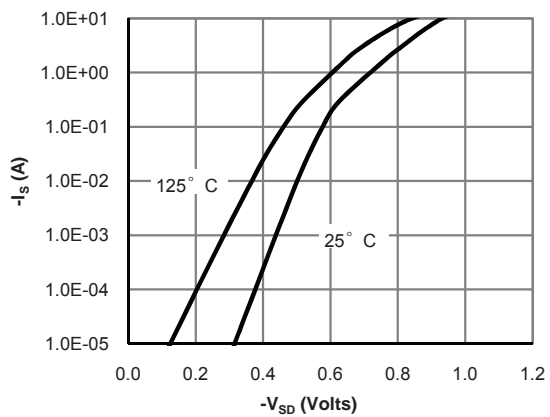


Figure 6: Body-Diode Characteristics

P-Channel MOSFET

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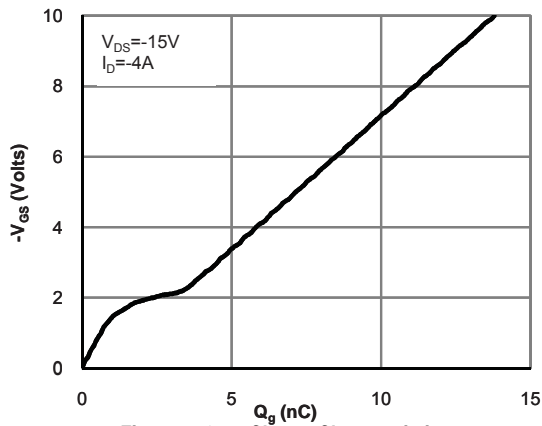


Figure 7: Gate-Charge Characteristics

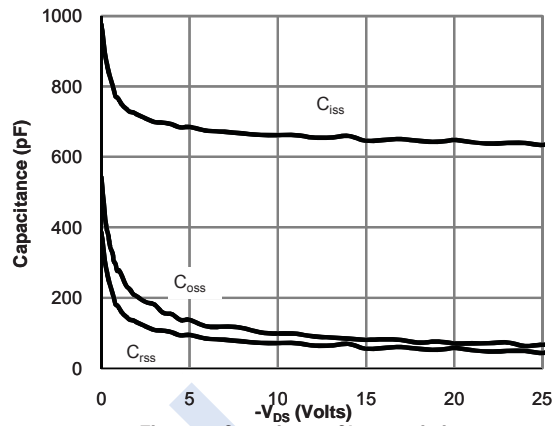


Figure 8: Capacitance Characteristics

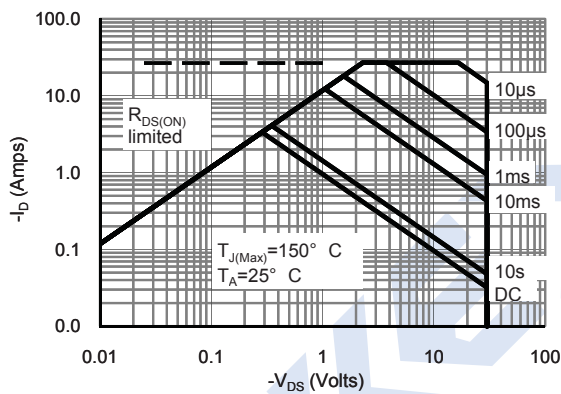


Figure 9: Maximum Forward Biased Safe Operating Area

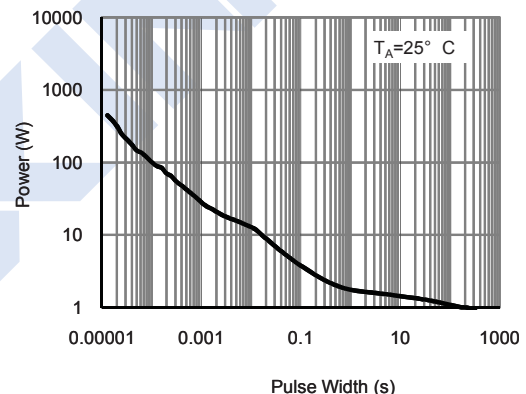


Figure 10: Single Pulse Power Rating Junction-to-Ambient

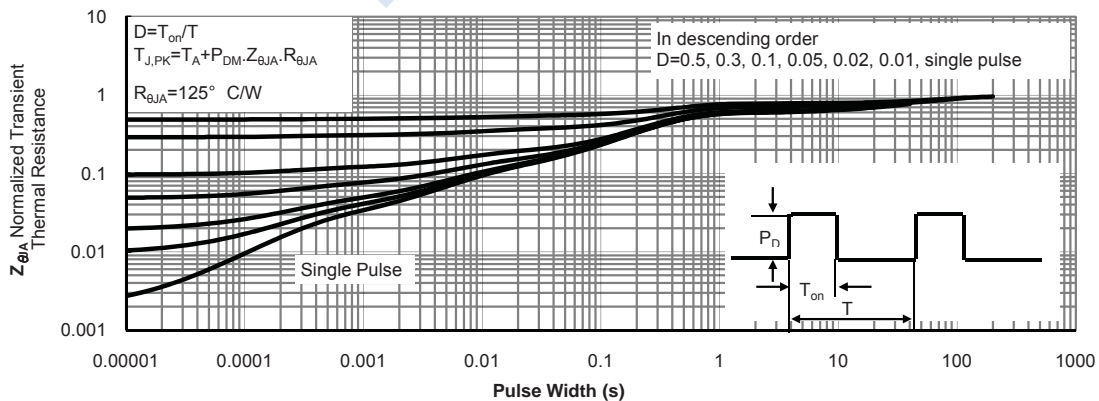


Figure 11: Normalized Maximum Transient Thermal Impedance