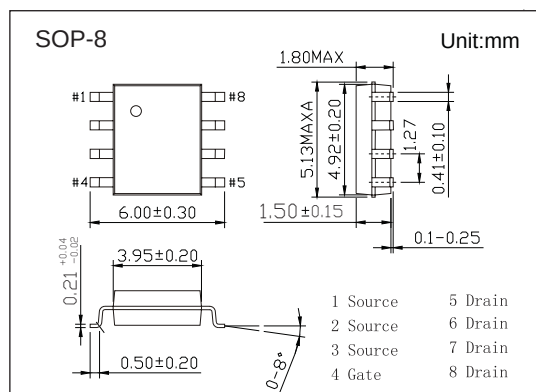
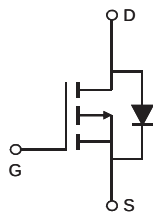


P-Channel MOSFET

RCJ7008

■ Features

- $V_{DS} = -40V$
- $I_D = -13 A$
- $R_{DS(on)} < 15m\Omega @ V_{GS} = -10V$
- $R_{DS(on)} < 18m\Omega @ V_{GS} = -4.5V$
- High density cell design for ultra low $R_{DS(on)}$
- Fully characterized avalanche voltage and current
- Excellent package for good heat dissipation



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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-40	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	-13	A
Pulsed Drain Current (Note 1)	I_{DM}	-50	
Maximum Power Dissipation	P_D	2.5	W
Thermal Resistance, Junction- to-Ambient (Note 2)	$R_{\theta JA}$	50	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Junction Storage Temperature Range	T_{stg}	-55 to 150	

Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, $t \leq 10$ sec.

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Off Characteristics						
Drain-Source Breakdown Voltage	V _{DSS}	I _D =-250μA, V _{GS} =0V	-40			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-40V, V _{GS} =0V			-1	μA
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
On Characteristics (Note 3)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1.3	-2	-2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-12A		12	15	mΩ
Forward Transconductance	g _{FS}	V _{DS} =-15V, I _D =-10A	35			S
Dynamic Characteristics (Note 4)						
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-20V, f=1MHz		2800		pF
Output Capacitance	C _{oss}			320		
Reverse Transfer Capacitance	C _{rss}			220		
Switching Characteristics (Note 4)						
Turn-On DelayTime	t _{d(on)}	V _{DS} =-20V, R _L = 2 Ω V _{GS} = -10 V, R _{GEN} = 6 Ω		11		ns
Turn-On Rise Time	t _r			75		
Turn-Off DelayTime	t _{d(off)}			89		
Turn-Off Fall Time	t _f			35		
Total Gate Charge	Q _g	V _{DS} =-20V, I _D =-12A, V _{GS} = -10V		40		nC
Gate Source Charge	Q _{gs}			6		
Gate Drain Charge	Q _{gd}			12		
Drain-Source Diode Characteristics (Note 3)						
Diode Forward Voltage	V _{SD}	I _{SD} =-12 A,V _{GS} =0V			-1.2	V
Diode Forward Current	I _S				-13	A

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	J7008 *****
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P-Channel MOSFET RCJ7008

■ Typical Electrical and Thermal Characteristics

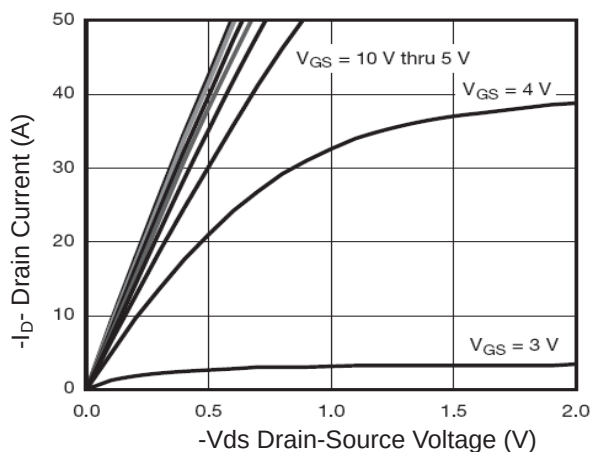


Figure 1 Output Characteristics

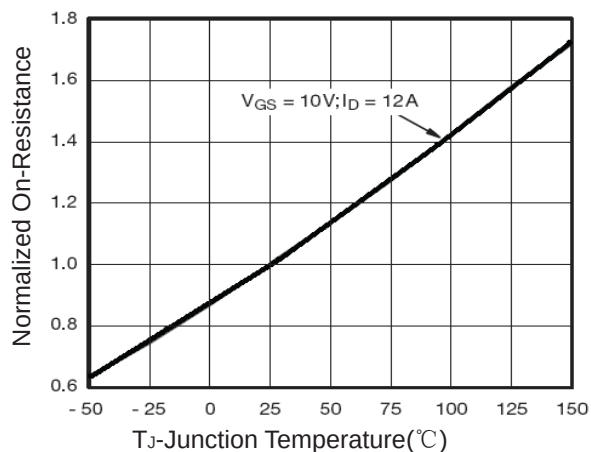


Figure 4 Rdson-Junction Temperature

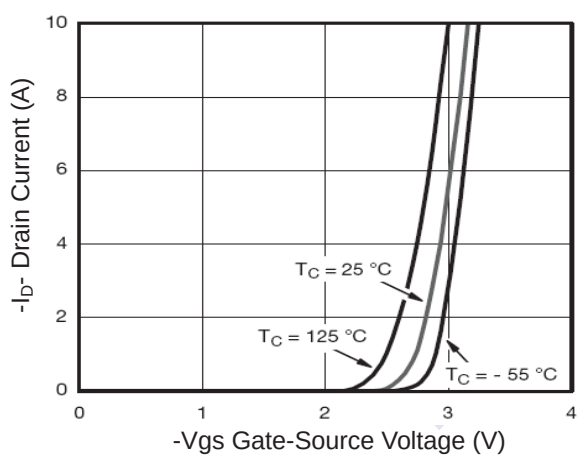


Figure 2 Transfer Characteristics

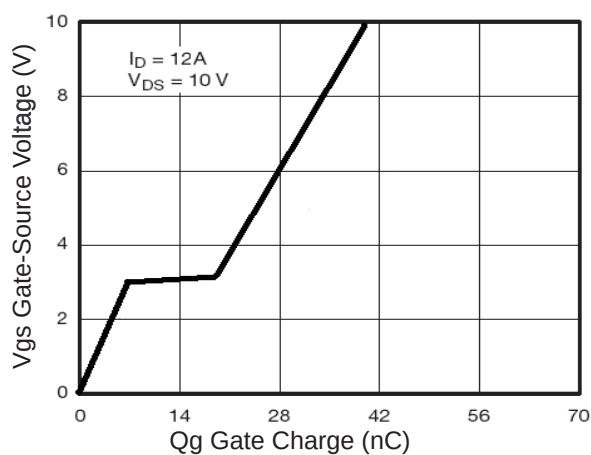


Figure 5 Gate Charge

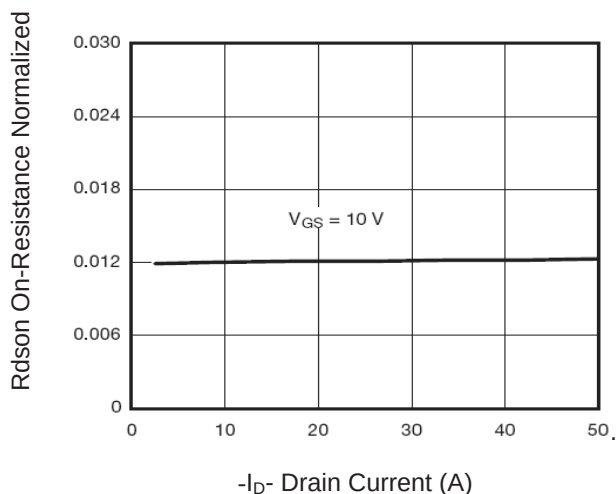


Figure 3 Rdson-Drain Current

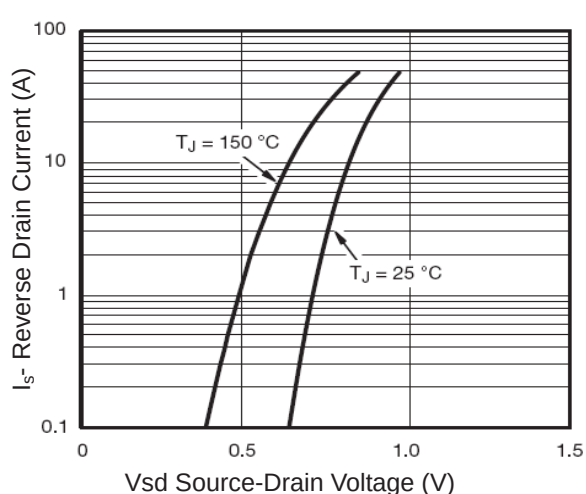


Figure 6 Source- Drain Diode Forward

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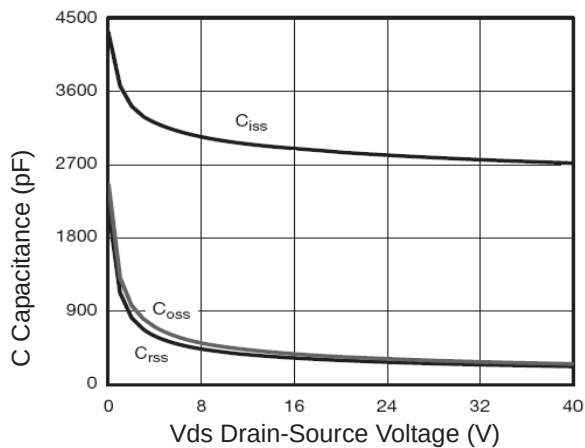


Figure 7 Capacitance vs Vds

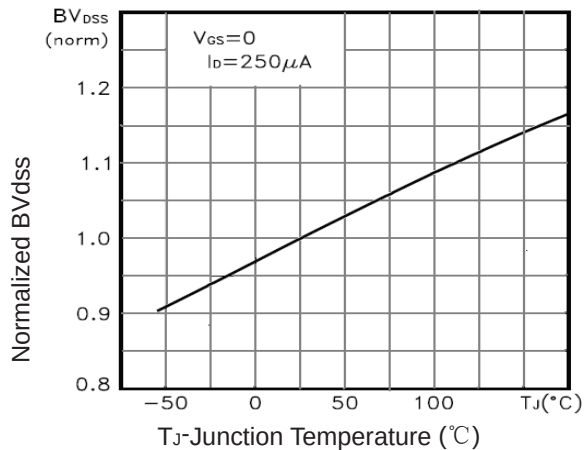


Figure 9 BV_{DSS} vs Junction Temperature

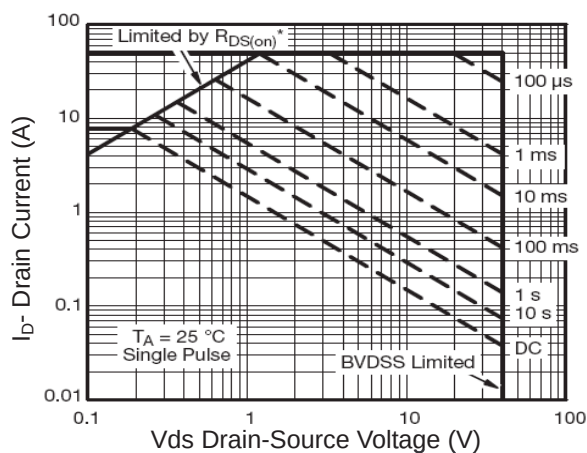


Figure 8 Safe Operation Area

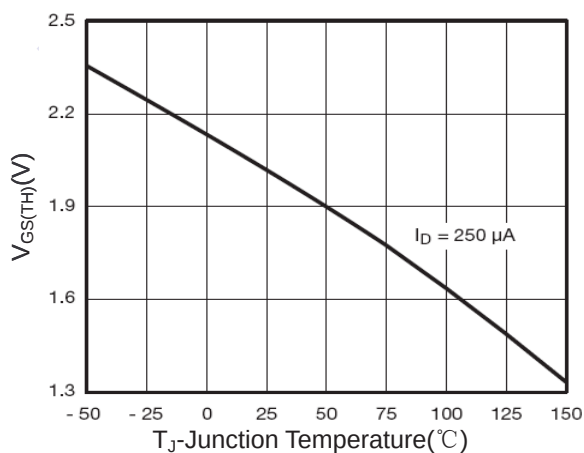


Figure 10 V_{GS(th)} vs Junction Temperature

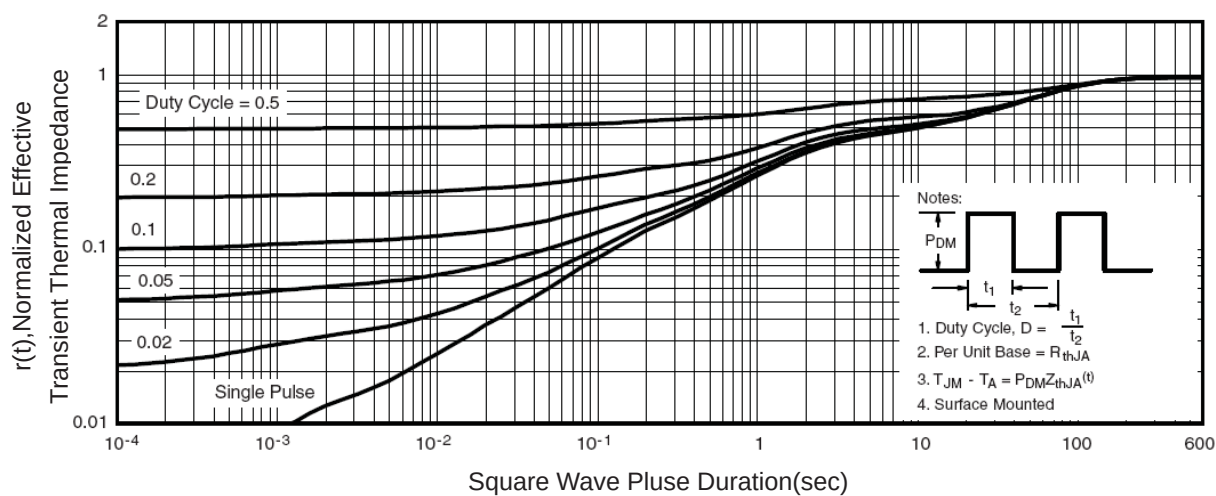


Figure 11 Normalized Maximum Transient Thermal Impedance