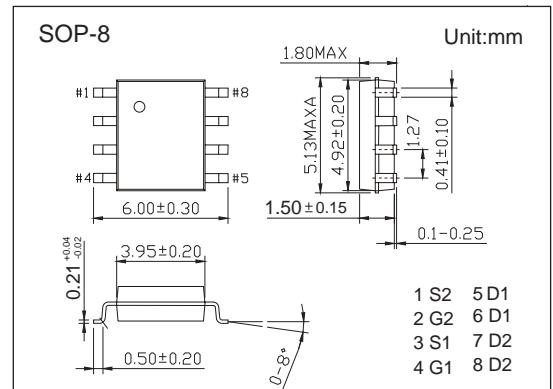
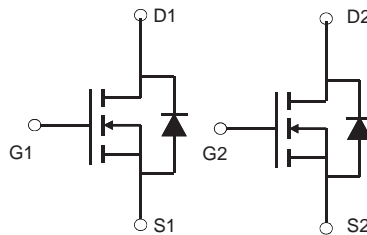


Dual N-Channel MOSFET

RC4816

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 8.5A$
- $R_{DS(ON)} < 19m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 26m\Omega$ ($V_{GS} = 4.5V$)
- Trench Power LV MOSFET technology
- High density cell design for low $R_{DS(ON)}$
- High Speed switching



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

Parameter		Symbol	Limit	Unit
Drain-source Voltage		V_{DS}	30	V
Gate-source Voltage		V_{GS}	± 20	V
Drain Current	$T_A=25^\circ C$	I_D	8.5	A
	$T_A=70^\circ C$		6.5	
Pulsed Drain Current ^A		I_{DM}	40	A
Total Power Dissipation	$T_A=25^\circ C$	P_D	2	W
	$T_A=70^\circ C$		1.28	W
Thermal Resistance Junction-to-Ambient ^B		$R_{\theta JA}$	50	$^\circ C/W$
Junction and Storage Temperature Range		T_J, T_{STG}	-55~+150	$^\circ C$

Dual N-Channel MOSFET

RC4816

Electrical Characteristics (T_J=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Static Parameter						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _D =250μA	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
Gate-Body Leakage Current	I _{GSS1}	V _{GS} =±20V, V _{DS} =0V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	1	1.5	2.2	V
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =8.5A		14	19	mΩ
		V _{GS} =4.5V, I _D =6A		20	26	
Diode Forward Voltage	V _{SD}	I _S =8.5A, V _{GS} =0V			1.2	V
Dynamic Parameters						
Input Capacitance	C _{iss}	V _{DS} =15V, V _{GS} =0V, f=1MHZ		600		pF
Output Capacitance	C _{oss}			78		
Reverse Transfer Capacitance	C _{rss}			69		
Switching Parameters						
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =5.6A		12.22		nC
Gate-Source Charge	Q _{gs}			2.37		
Gate-Drain Charge	Q _{gd}			2.31		
Reverse Recovery Charge	Q _{rr}	I _F =5.6A, di/dt=100A/us		1.28		nC
Reverse Recovery Time	t _{rr}			16.5		
Turn-on Delay Time	t _{D(on)}	V _{GS} =10V, V _{DS} =15V, I _D =5.6A R _{GEN} =3Ω		5		ns
Turn-on Rise Time	t _r			28.2		
Turn-off Delay Time	t _{D(off)}			12.8		
Turn-off fall Time	t _f			21.6		

A. Pulse Test: Pulse Width ≤ 300us, Duty cycle ≤ 2%.

B. R_{θJA} is the sum of the junction-to-case and case-to-ambient thermal resistance, where the case thermal reference is defined as the solder mounting surface of the drain pins. R_{θJC} is guaranteed by design, while R_{θJA} is determined by the board design. The maximum rating presented here is based on mounting on a 1 in 2 pad of 2oz copper.

Dual N-Channel MOSFET RC4816

Typical Performance Characteristics

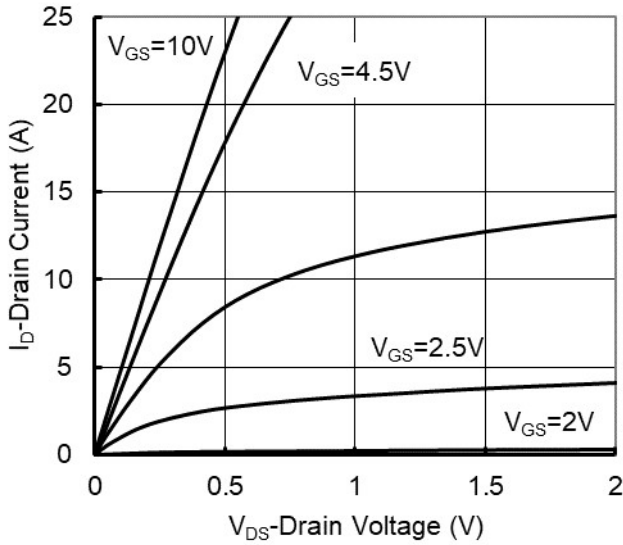


Figure1. Output Characteristics

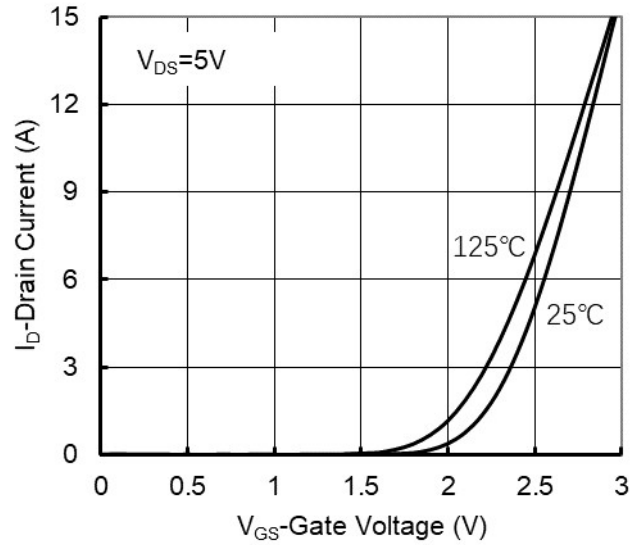


Figure2. Transfer Characteristics

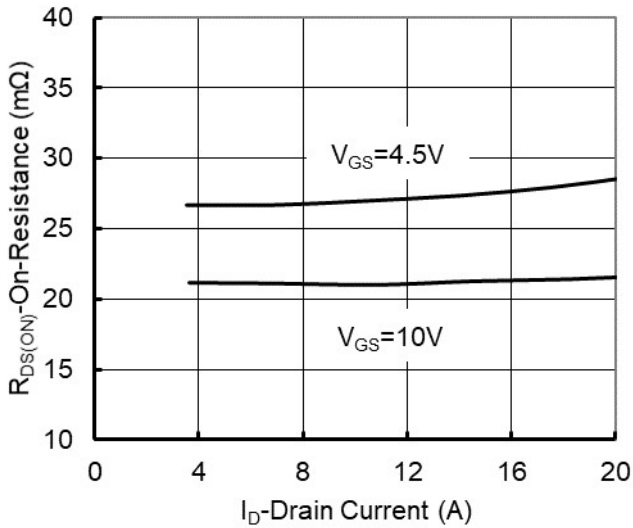


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

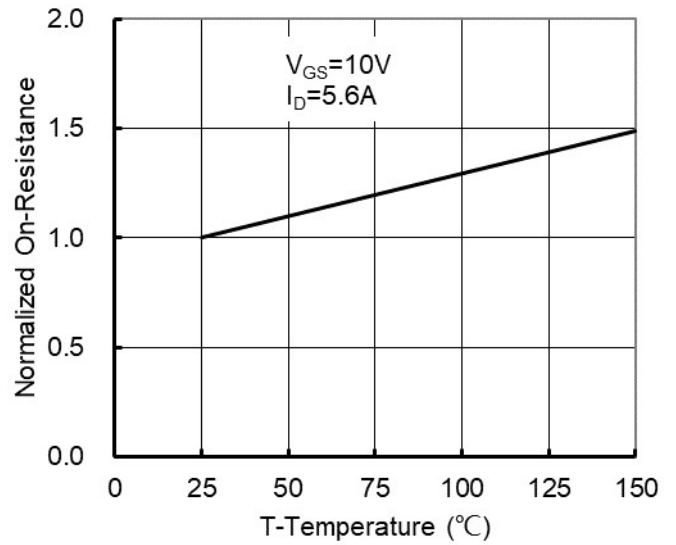


Figure 4: On-Resistance vs. Junction Temperature

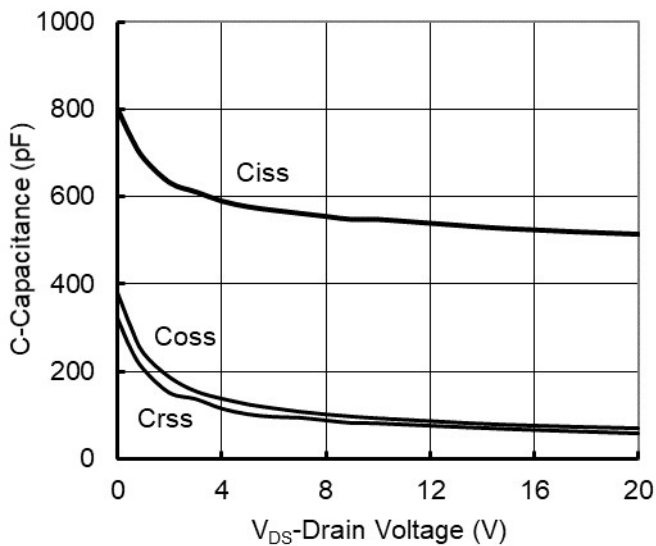


Figure5. Capacitance Characteristics

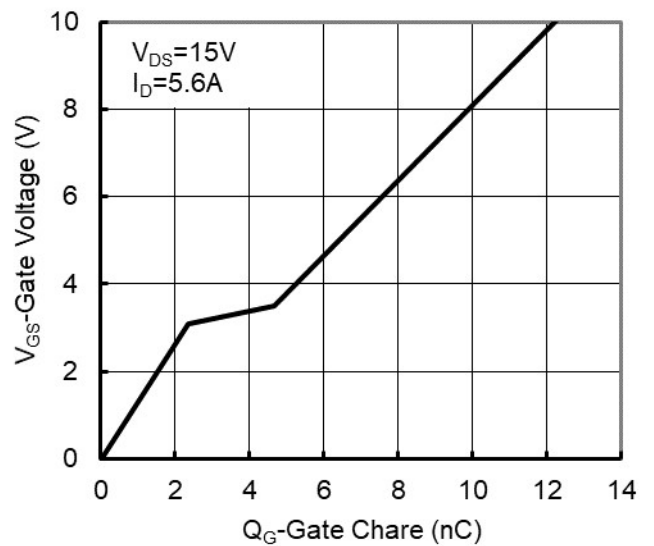


Figure6. Gate Charge

Dual N-Channel MOSFET RC4816

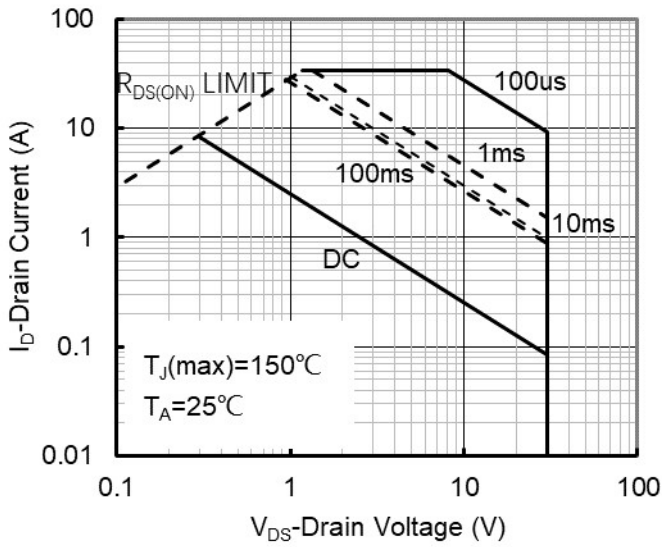


Figure 7. Safe Operation Area

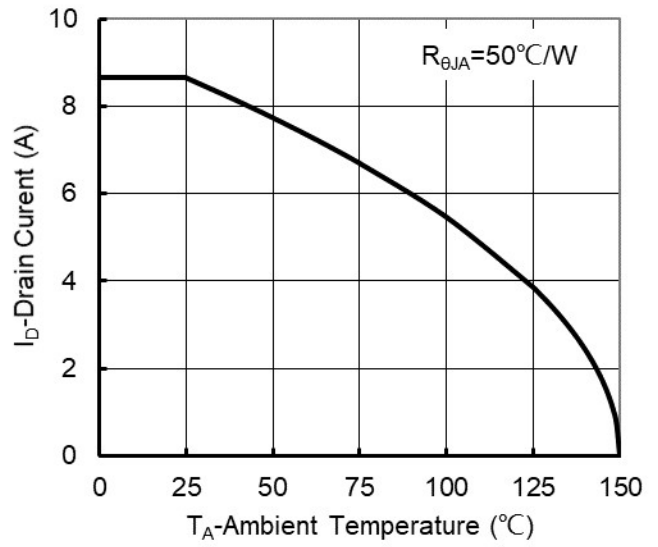


Figure 8. Maximum Continuous Drain Current vs Ambient Temperature

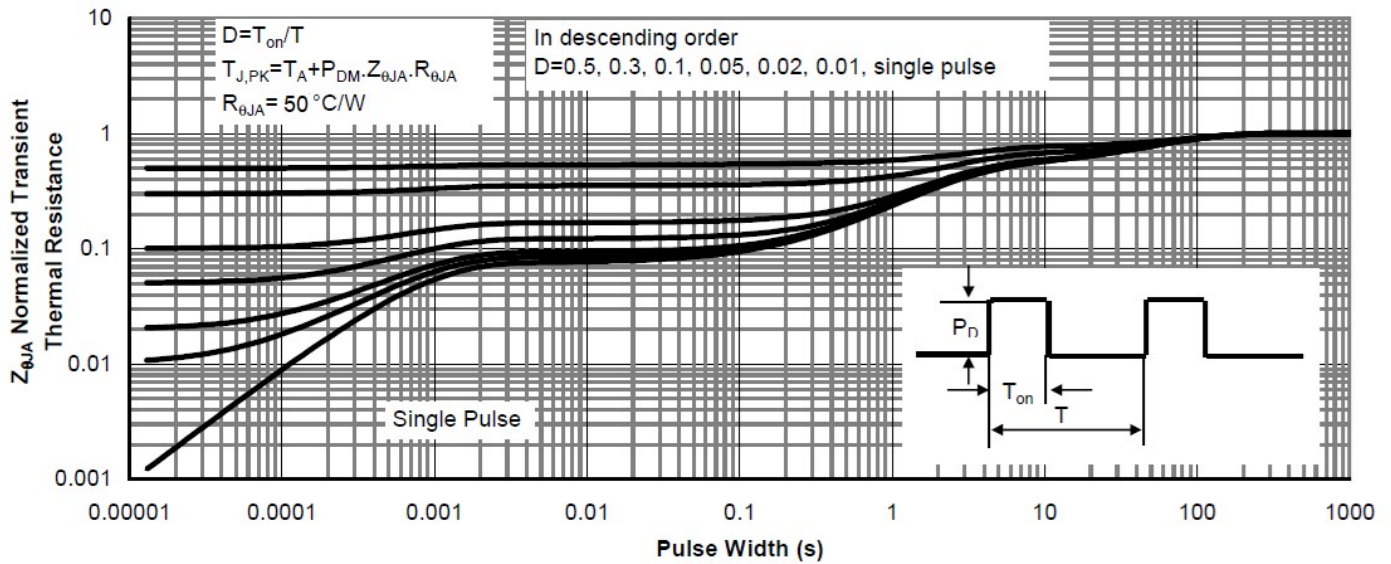
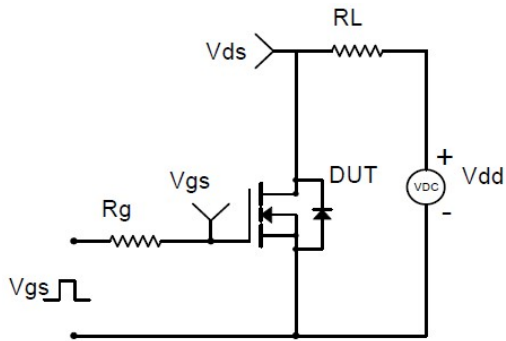
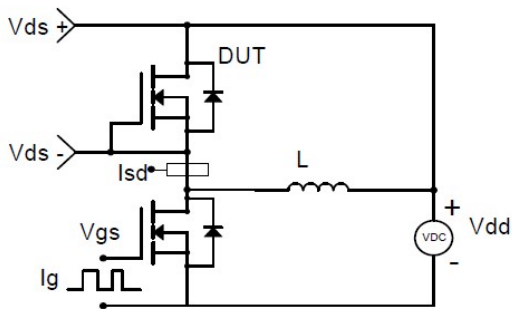


Figure 9. Normalized Maximum Transient Thermal Impedance

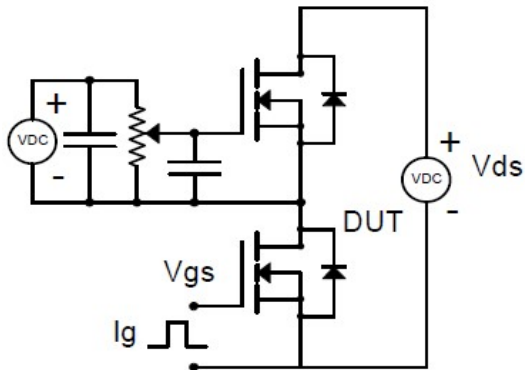
Dual N-Channel MOSFET RC4816



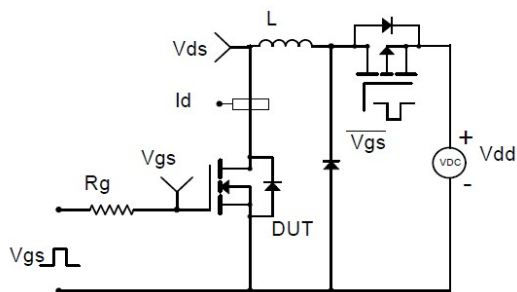
Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



Gate Charge Test Circuit & Waveform



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms