CQAOS 重庆万国

Green Product

CQA34P15

20V P-CHANNEL MOSFET

Product Summary

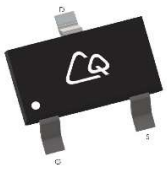
V(BR)DSS	RDS(ON) max	ID max
-20V	<37mΩ @ VGS = -4.5V	-4.9A
	<47mΩ @ VGS = -2.5V	
	<62mΩ @ VGS = -1.8V	

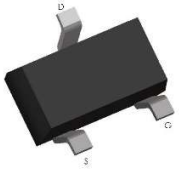
Description and Applications

The CQA34P15 uses advanced trench technology to provide excellent RDS(ON), low gate charge and operation with gate voltage as low as 1.8V. This device is suitable for use as a load switch or other general applications.

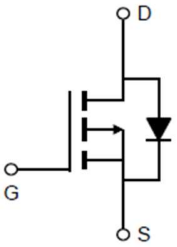
RoHS and Halogen-Free Compliant.

View and Internal Schematic Diagram





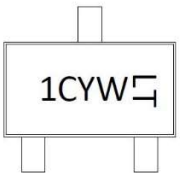
SOT23



Internal Schematic

Marking Information

SOT23



PN=1C
YW= Date Code Marking
Y= Year W = Week
LT= Lot code

Ordering Information

Part Number	Case	Packaging
CQA34P15	SOT23	3,000/Tape & Reel; 21,000/Inner Box

Maximum Ratings (@TA = +25°C unless otherwise specified.)

Parameters		Symbol	Max	Units
Drain-Source Voltage		VDSS	-20	V
Gate-Source Voltage		VGSS	±12	V
Continuous Drain Current	TA = +25°C TA = +70°C	ID	-4.9 -3.9	A
Pulsed Drain Current C		IDM	-40	A
Power Dissipation B	TA = +25°C TA = +70°C	PD	1.38 0.88	W
Operating and Storage Temperature Range		TJ, TG	-55 to+150	°C

Thermal Characteristics

Characteristic		Symbol	Typ	Max	Unit
Maximum Junction-to-Ambient [A]	t ≤ 10s	$R_{\theta JA}$	81	90	°C/W
Maximum Junction-to-Ambient [A D]	Steady-State		109	125	°C/W
Maximum Junction-to-Lead	Steady-State	$R_{\theta JL}$	38	40	°C/W

Electrical Characteristics (@T_A = +25°C unless otherwise specified.)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
STATIC PARAMETERS						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=-250μA, V_{GS}=0V	-20			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=-30V, V_{GS}=0V			-1	μA
		T_J=55°C			-5	
I_{GSS}	Gate-Body leakage current	V_{DS}=0V, V_{GS}= ±12V			±100	nA
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS} I_D=-250μA	-0.3	-0.7	-0.9	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=-4.5V, I_D=-4.0A		28	37	mΩ
		T_J=125°C		38	50	
		V_{GS}=-2.5V, I_D=-4.0A		36	47	mΩ
		V_{GS}=-1.8V, I_D=-2.0A		49	62	mΩ
		V_{GS}=-1.5V, I_D=-1.0A		69		mΩ
g_{FS}	Forward Transconductance	V_{DS}=-5V, I_D=-4.0A		18		S
V_{SD}	Diode Forward Voltage	I_S=-1A,V_{GS}=0V		-0.7	-1	V
I_S	Maximum Body-Diode Continuous Current				-1.9	A
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=-10V, f=1MHz		792		pF
C_{oss}	Output Capacitance			112		pF
C_{rss}	Reverse Transfer Capacitance			95		pF
R_g	Gate resistance	V_{GS}=0V, V_{DS}=0V		11.8		Ω
SWITCHING PARAMETERS						
Q_g(10V)	Total Gate Charge	V_{GS}=-4.5V, V_{DS}=-24V, I_D=-4.0A		9.5		nC
Q_{gs}	Gate Source Charge			2.0		nC
Q_{gd}	Gate Drain Charge			2.0		nC
$t_{D(on)}$	Turn-On Delay Time	V_{GS}=-4.5V, V_{DS}=-10V, R_L=2.5Ω, R_{GEN}=3Ω		8.6		ns
t_r	Turn-On Rise Time			35.8		ns
$t_{D(off)}$	Turn-Off Delay Time			62		ns
t_f	Turn-Off Fall Time			57		ns
t_{rr}	Body Diode Reverse Recovery Time	IF=-4.0A, dI/dt=100A/μs		12		ns
Q_{rr}	Body Diode Reverse Recovery Charge	IF=-4.0A, dI/dt=100A/μs		2.8		nC

A. The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 1oz. Copper, in a still air environment with T_A =25°C. The value in any given application depends on the user's specific board design.

B. The power dissipation P_D is based on $T_{J(MAX)}$=150°C, using ≤ 10s junction-to-ambient thermal resistance.

C. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J=25°C.

D. The $R_{\theta JA}$ is the sum of the thermal impedance from junction to lead $R_{\theta JL}$ and lead to ambient.

E. The static characteristics in Figures 1 to 6 are obtained using <300μs pulses, duty cycle 0.5% max.

F. These curves are based on the junction-to-ambient thermal impedance which is measured with the device mounted on 1in^2 FR-4 board with 1oz. Copper, assuming a maximum junction temperature of $T_{J(MAX)}$=150°C. The SOA curve provides a single pulse rating.

TYPICAL ELECTRICAL AND THERMAL CHARACTERISTICS

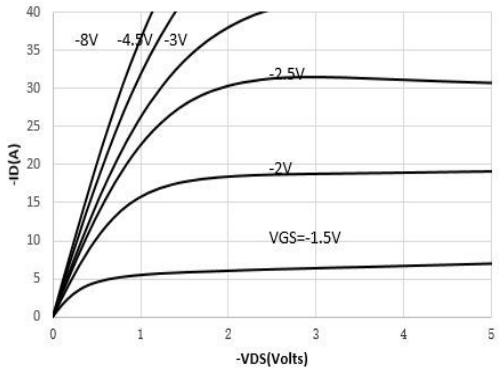


Figure 1：On-Region Characteristics (Note E)

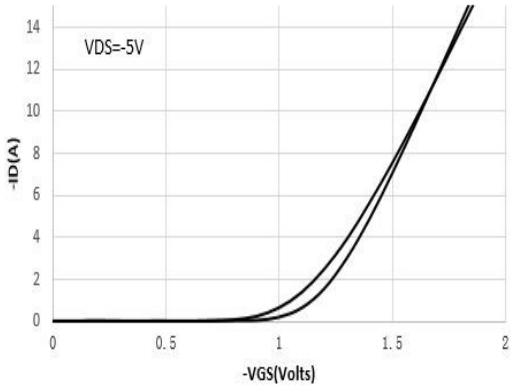


Figure 2 Transfer Characteristics (Note E)

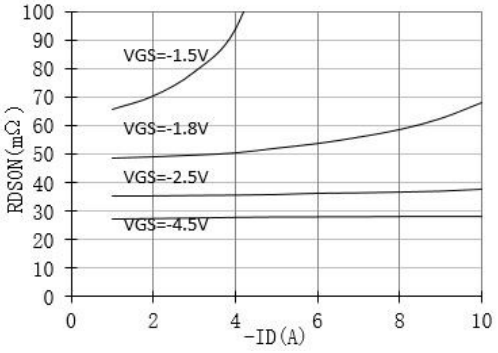


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

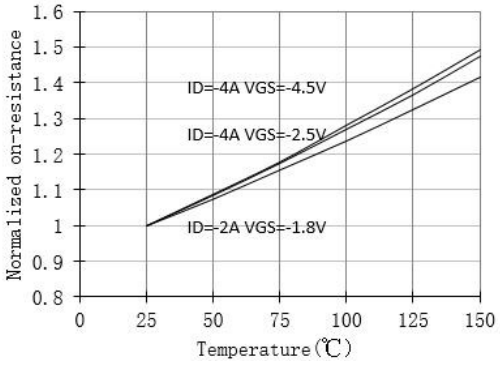


Figure 4: On-Resistance vs. Junction Temperature (Note E)

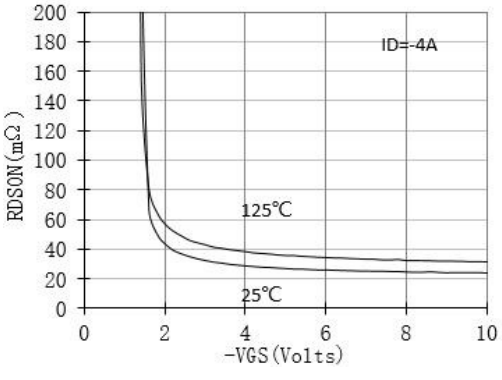


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

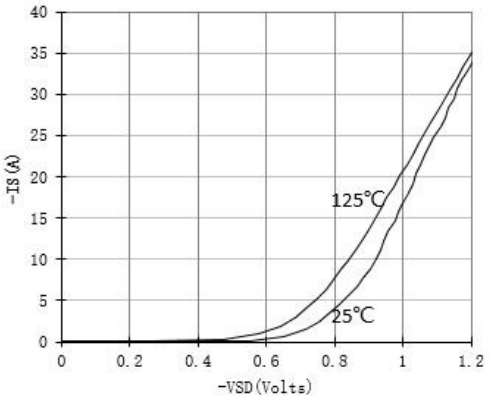


Figure 6: Body-Diode Characteristics (Note E)

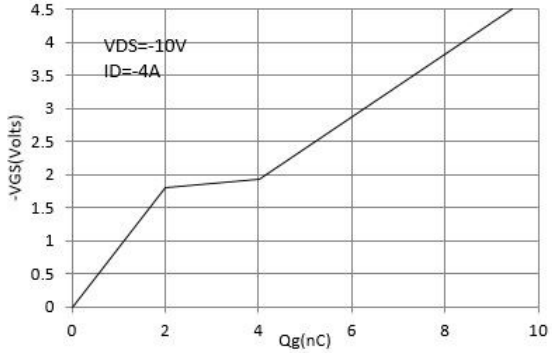


Figure 7: Gate-Charge Characteristics

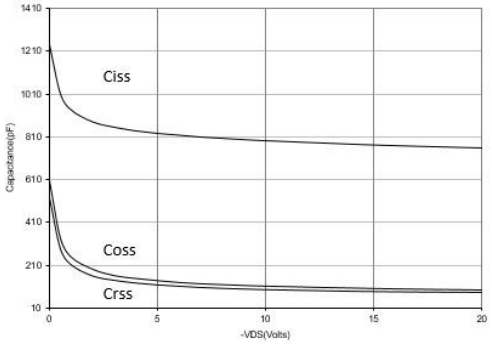


Figure 8: Capacitance Characteristics

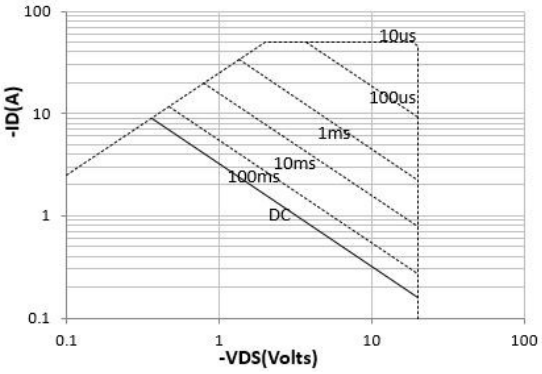


Figure 9: Maximum Forward Biased Safe Operating Area

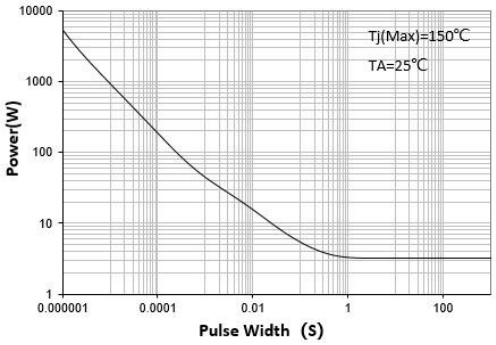


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

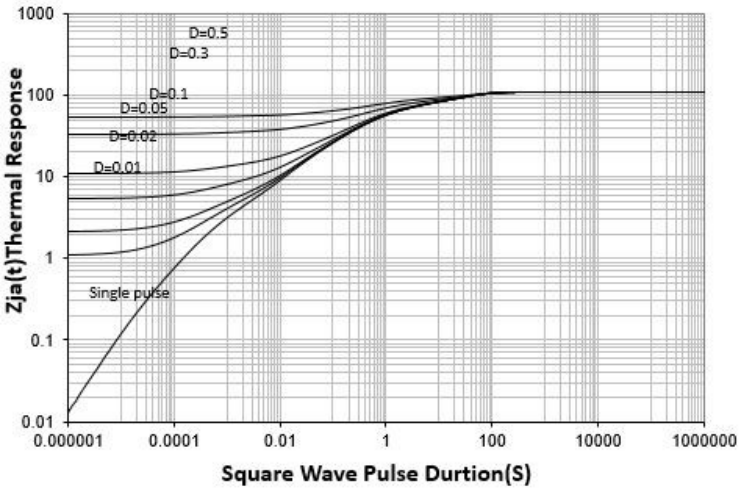


Figure 11: Maximum Transient Thermal Impedance (Note E)

单击下面可查看定价，库存，交付和生命周期等信息

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