CQAOS 重庆万国

Green Product

CQA34N00

30V N-CHANNEL MOSFET

Product Summary

V(BR)DSS	RDS(ON) max	ID max
30V	<26mΩ @ VGS = 10V	5.7A
	<31mΩ @ VGS = 4.5V	
	<47mΩ @ VGS = 2.5V	

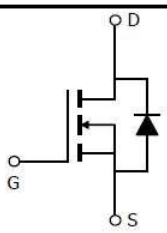
Description and Applications

The CQA34N00 combines advanced trench MOSFET technology with a low resistance package to provide extremely low RDS(ON). This device is suitable for use as a load switch or in PWM applications.

RoHS and Halogen-Free Compliant.

View and Internal Schematic Diagram

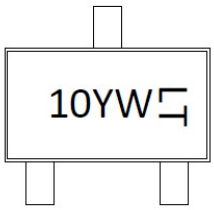
SOT23



Internal Schematic

Marking Information

SOT23



NOTE:
10 - Part number code
Y - Year code
W - Week code
L&T - Assembly lot code

Ordering Information

Part Number	Case	Packaging
CQA34N00	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	30	V
Gate-Source Voltage		VGSS	±12	V
Continuous Drain Current	TA = +25°C TA = +70°C	ID	5.7 4.7	A
Pulsed Drain Current C		IDM	30	A
Power DissipationB	TA = +25°C TA = +70°C	PD	1.4 0.9	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	$R_{\theta JA}$	70	90	°C/W
Maximum Junction-to-Ambient A D	Steady-State		100	125	°C/W
Maximum Junction-to-Case	Steady-State	$R_{\theta JL}$	63	80	°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	30			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=30V, V_{GS}=0V			1	μA
		TJ=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	0.4	0.9	1.5	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	V_{GS}=10V, I_D=5.7A		19	26	mΩ
		TJ=125°C		28	38	
		V_{GS}=4.5V, I_D=5A		20.7	31	mΩ
		V_{GS}=2.5V, I_D=3A		24.8	47	mΩ
g_{FS}	Forward Trans conductance	V_{DS}=5V, I_D=5.7A		33		S
V_{SD}	Diode Forward Voltage	I_S=1A,V_{GS}=0V		0.7	1	V
I_S	Maximum Body-Diode Continuous Current				2	A
DYNAMIC PARAMETERS						
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=15V, f=1MHz		834		pF
C_{oss}	Output Capacitance			64		pF
C_{rss}	Reverse Transfer Capacitance			50		pF
R_g	Gate resistance	V_{GS}=0V, V_{DS}=0V, f=1MHz		1.55		Ω
SWITCHING PARAMETERS						
Q_g(10V)	Total Gate Charge	V_{GS}=10V, V_{DS}=15V, I_D=5.7A		9.5		nC
Q_{gs}	Gate Source Charge			2.2		nC
Q_{gd}	Gate Drain Charge			2.2		nC
$t_{D(on)}$	Turn-On Delay Time	V_{GS}=10V, V_{DS}=15V, R_L=2.6Ω, R_{GEN}=3Ω		6		ns
t_r	Turn-On Rise Time			32.8		ns
$t_{D(off)}$	Turn-Off Delay Time			21		ns
t_f	Turn-Off Fall Time			44		ns
t_{rr}	Body Diode Reverse Recovery Time	IF=5.7A, dI/dt=100A/μs		7		ns
Q_{rr}	Body Diode Reverse Recovery Charge	IF=5.7A, dI/dt=100A/μs		2		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 $T_{J(MAX)}$=170°C, using junction-to-caset thermal resistance, and is more useful in setting the upper dissipation limit for cases where additional heatsinking is used

C. Repetitive rating, pulse width limited by junction temperature $T_{J(MAX)}$=170°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 impedence from junction to lead $R_{\theta JC}$ and case 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 impedence 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 CHARACTERIS

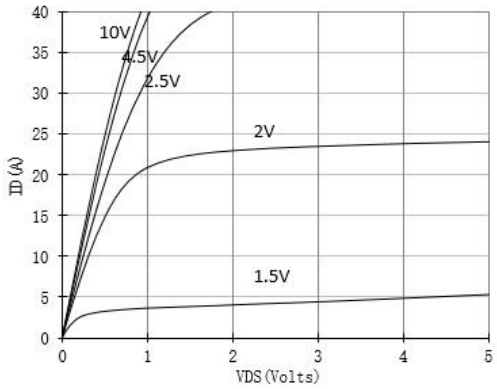


Figure 1：On-Region Characteristics (Note E)

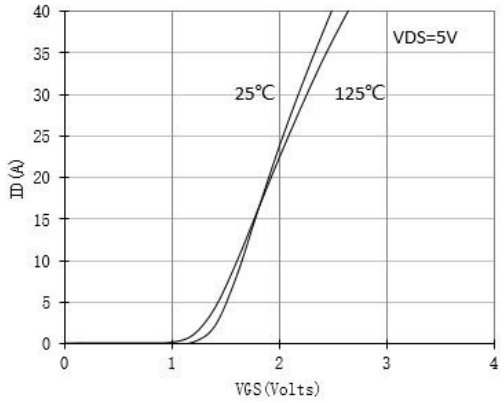


Figure 2 Transfer Characteristics (Note E)

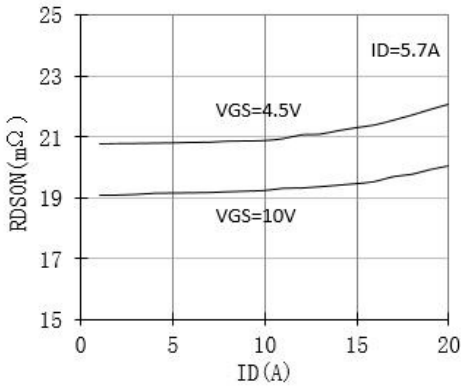


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

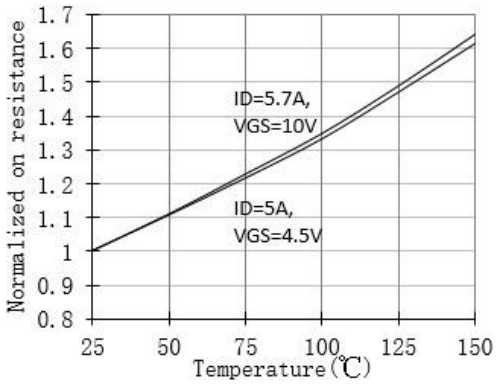


Figure 4: On-Resistance vs. Junction Temperature (Note E)

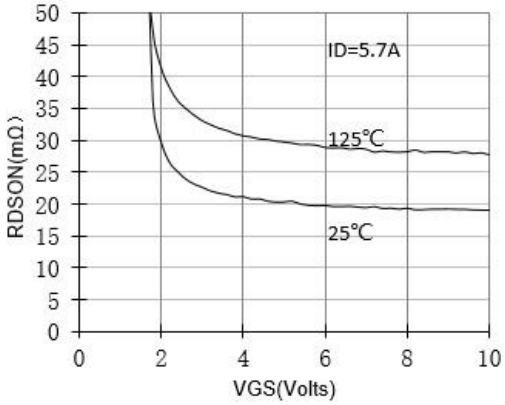


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

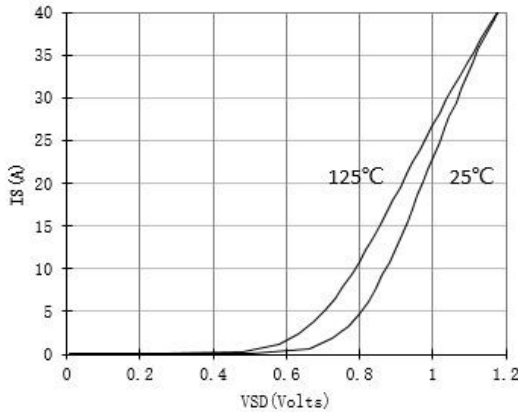


Figure 6: Body-Diode Characteristics (Note E)

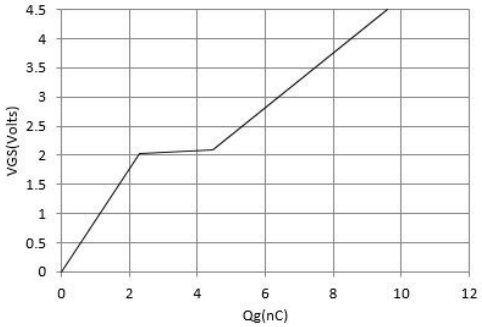


Figure 7: Gate-Charge Characteristics

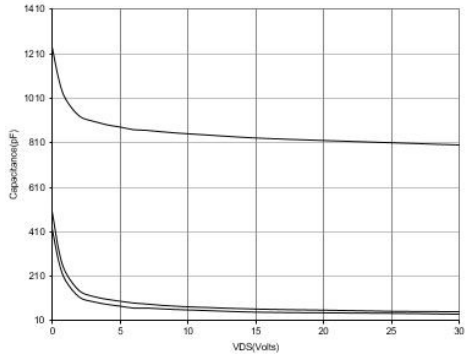


Figure 8: Capacitance Characteristics

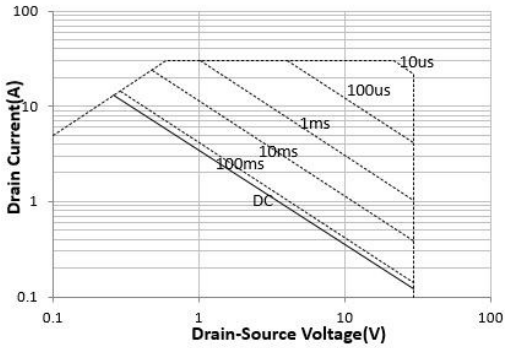


Figure 9: Maximum Forward Biased Safe Operating Area

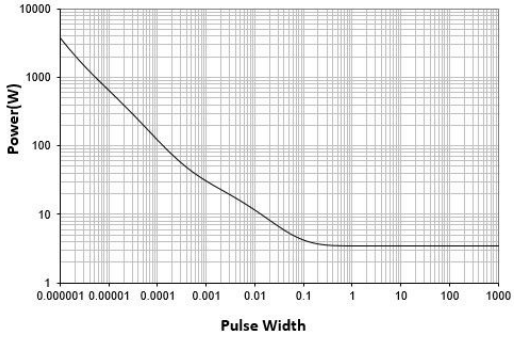


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

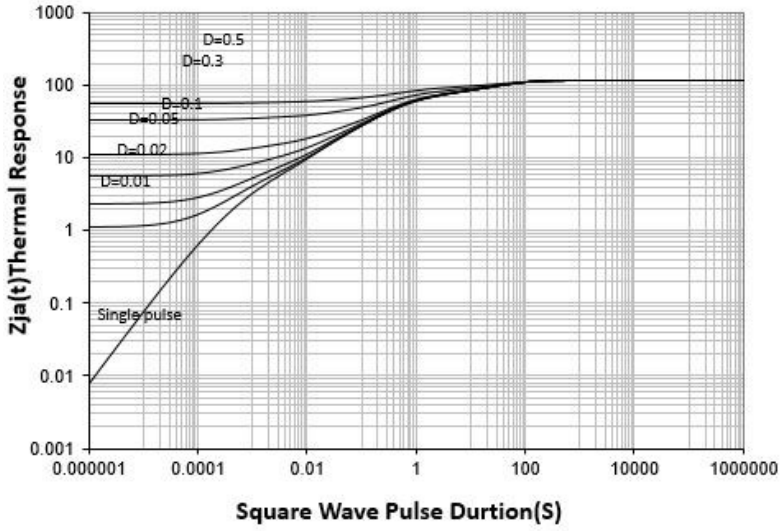


Figure 11: Normalized Maximum Transient Thermal Impedance (Note E)

单击下面可查看定价，库存，交付和生命周期等信息

>>CQAOS