CQY21357A

30V P-CHANNEL MOSFET

Product Summary

$V_{(BR)DSS}$	$R_{DS(ON)}$ max	I_D max
-30V	<11mΩ @ V_{GS} = -10V	-24A
	<17.5mΩ @ V_{GS} = -4.5V	

Description and Applications

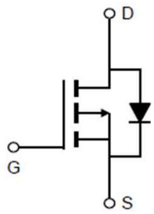
The CQY21357A uses advanced trench technology to provide excellent RDS(ON). This device is suitable for use as a load switch or other general applications

This device is ideal for switch switching, power management in portable / desktop PCs.

RoHS and Halogen-Free Compliant.

View and Internal Schematic Diagram

DFN3x3EP



Internal Schematic

Marking Information

DFN3x3EP

NOTE:
LOGO - CQAOS
21357A - Part number coder
F - Fab location code
A - Assembly location code
Y - Year code
W - Week code
L&T - Assembly lot code

Ordering Information

Part Number	Case	Packaging
CQY21357A	DFN3x3EP	5,000/Tape & Reel

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

Parameters		Symbol	Max	Units
Drain-Source Voltage		V_{DSS}	-30	V
Gate-Source Voltage		V_{GSS}	±20	V
Continuous Drain Current G	T_A = +25°C	I_D	-24	A
	T_A = +100°C		-24	
Pulsed Drain Current C		I_{DM}	-82	A
Power Dissipation B	T_A = +25°C	P_D	24	W
	T_A = +100°C		9.6	
Operating and Storage Temperature Range		T_J, T_G	-55 to+150	°C

Thermal Characteristics

Characteristic		Symbol	Typ	Max	Unit
Maximum Junction-to-Ambient A	t ≤ 10s	$R_{θJA}$	26	30	°C/W
Maximum Junction-to-Ambient A D	Steady-State		49	60	°C/W
Maximum Junction-to-Case	Steady-State	$R_{θJC}$	4.5	5.2	°C/W

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

Symbol	Parameter	Conditions	Min	Typ	Max	Units
STATIC PARAMETERS						
BVDSS	Drain-Source Breakdown Voltage	ID=-250µA, VGS=0V	-30			V
IDSS	Zero Gate Voltage Drain Current	VDS=-30V, VGS=0V			-1	µA
		TJ=55℃			-5	
IGSS	Gate-Body leakage current	VDS=0V, VGS= ±20V			±100	nA
VGS(th)	Gate Threshold Voltage	VDS=VGS ID=-250µA	-1	-1.5	-2	V
RDS(ON)	Static Drain-Source On-Resistance	VGS=-10V, ID=-17A		8	11	mΩ
		TJ=125℃		11.9		
		VGS=-4.5V, ID=-13A		12	17.5	mΩ
gFS	Forward Trans conductance	VDS=-5V, ID=-17A		61.8		S
VSD	Diode Forward Voltage	IS=-1A,VGS=0V		-0.73	-1	V
IS	Maximum Body-Diode Continuous Current				-24	A
DYNAMIC PARAMETERS						
Ciss	Input Capacitance	VGS=0V, VDS=-15V, f=1MHz		1821		pF
Coss	Output Capacitance			237		pF
Crss	Reverse Transfer Capacitance			205		pF
Rg	Gate resistance	VGS=0V, VDS=0V,		4.4		Ω
SWITCHING PARAMETERS						
Qg	Total Gate Charge	VGS=-10V, VDS=-15V, ID=-17A		37		nC
Qgs	Gate Source Charge			7.3		nC
Qgd	Gate Drain Charge			7.7		nC
tD(on)	Turn-On Delay Time	VGS=-10V, VDS=-15V, RL=0.9Ω, RGEN=3Ω		9		ns
tr	Turn-On Rise Time			71		ns
tD(off)	Turn-Off Delay Time			46		ns
tf	Turn-Off Fall Time			77		ns
trr	Body Diode Reverse Recovery Time	IF=-17A, dI/dt=100A/µs		13.8		ns
Qrr	Body Diode Reverse Recovery Charge	IF=-17A, dI/dt=100A/µs		1.2		nC

A. The value of $R_{θJA}$ 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 junction-to-case 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 $T_{J(MAX)}$=150°C. Ratings are based on low frequency and duty cycles to keep initial T_J=25°C.

D. The $R_{θJA}$ is the sum of the thermal impedance from junction to case $R_{θJc}$ 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-case thermal impedance which is measured with the device mounted on 1in^2 FR-4 board with 1oz. Copper, in a still air environment with TA=25℃

G. The maximum current rating is package limited

TYPICAL ELECTRICAL AND THERMAL CHARACTERIS

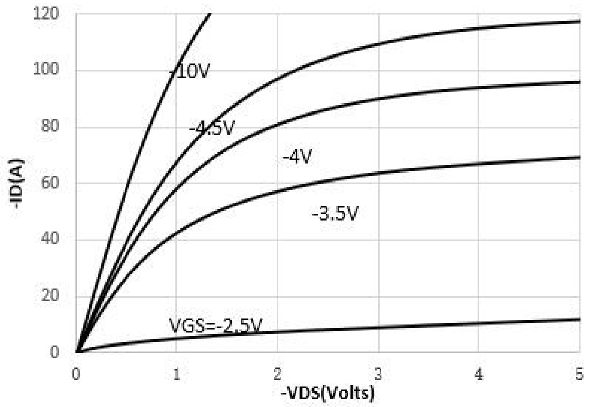


Figure 1： On-Region Characteristics (Note E)

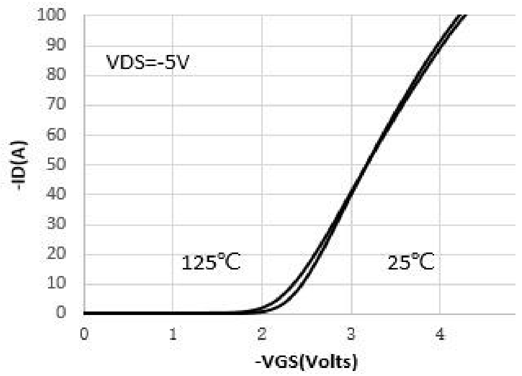


Figure 2 Transfer Characteristics (Note E)

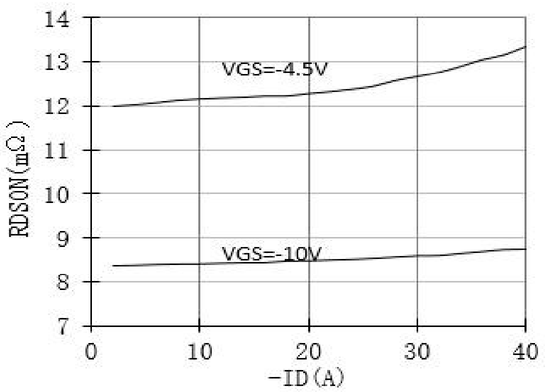


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

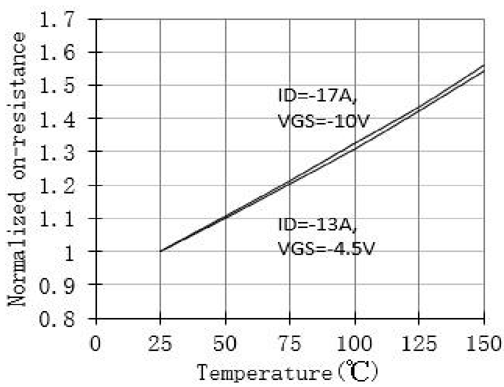


Figure 4: On-Resistance vs. Junction Temperature (Note E)

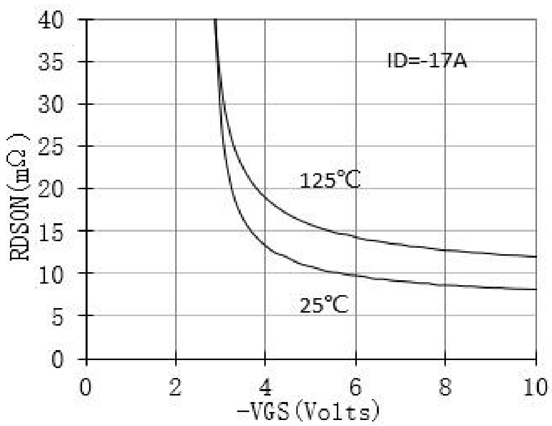


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

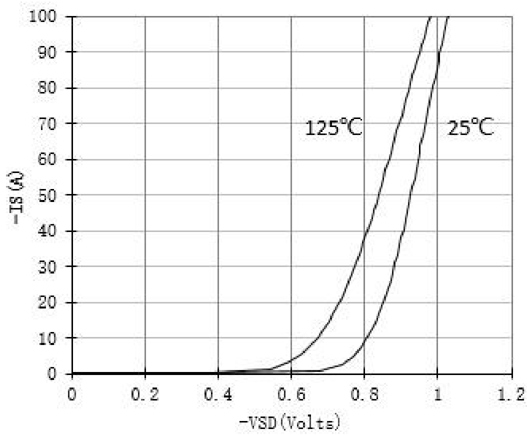


Figure 6: Body-Diode Characteristics (Note E)

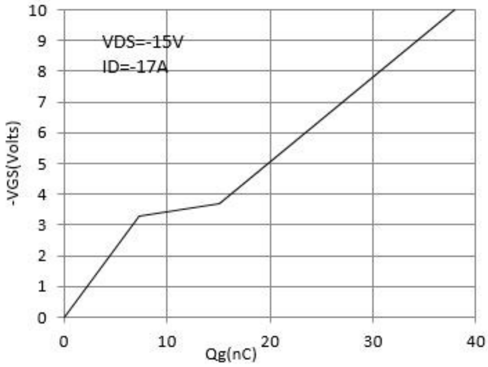


Figure 7: Gate-Charge Characteristics

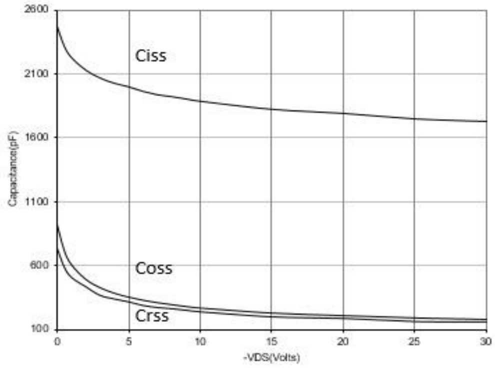


Figure 8: Capacitance Characteristics

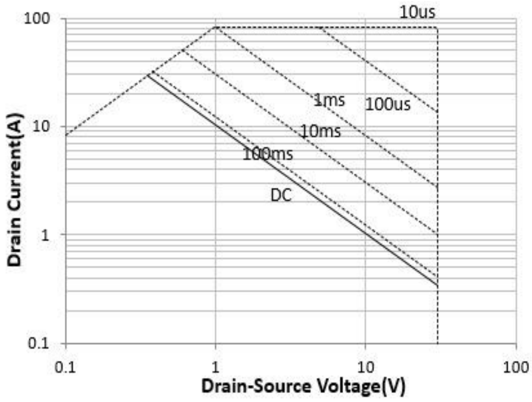


Figure 9: Maximum Forward Biased Safe Operating Area

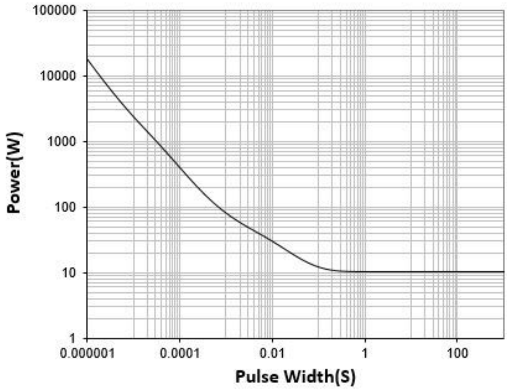


Figure 10: Single Pulse Power Rating Junction-to-Case

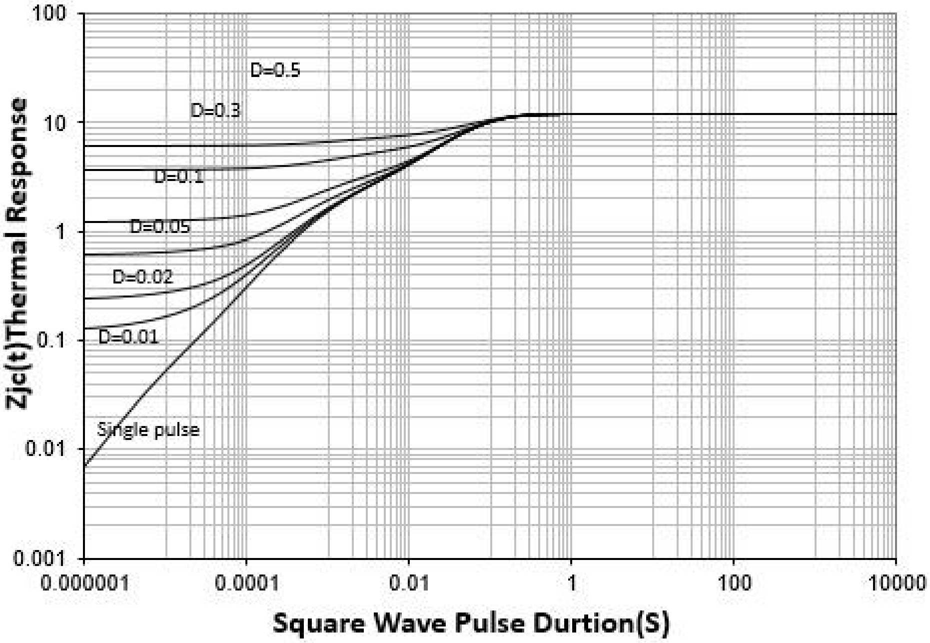


Figure 11: Normalized Maximum Transient Thermal Impedance (Note E)

单击下面可查看定价，库存，交付和生命周期等信息

[>>CQAOS]