



CPxxxxQC Series TSS

Rev.1.1

DESCRIPTION:

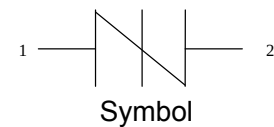
CPxxxxQC series thyristors are a type of semiconductor components. They are designed to protect baseband equipment from damaging overvoltage transients.

FEATURES:

- Low profile package.
- Low on-state voltage.
- Excellent capability of absorbing transient surge.
- Quick response to surge voltage (ns Level).
- Eliminates overvoltage caused by fast rising transients.
- Non degenerative.



DFN3333-2L

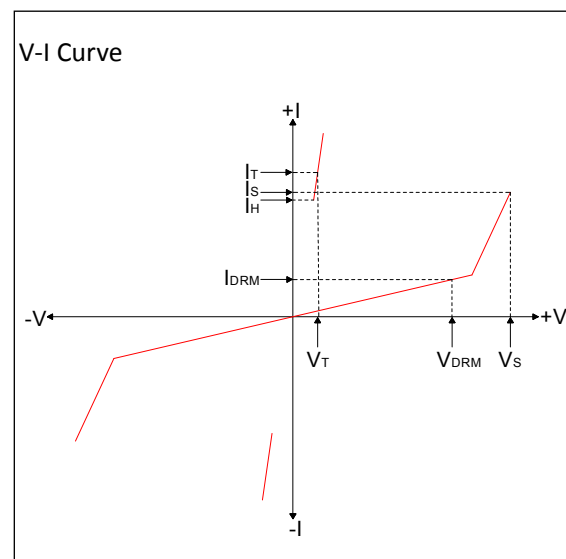


ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T_{STG}	-60 to +150	$^{\circ}\text{C}$
Operating junction temperature range	T_J	-40 to +125	$^{\circ}\text{C}$
Repetitive peak pulse current @10/1000 μs	I_{PP}	100	A

ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Symbol	Parameter
V_{DRM}	Peak off-state voltage
I_{DRM}	Off-state current
V_S	Switching voltage
I_S	Switching current
V_T	On-state voltage
I_T	On-state current
I_H	Holding current
C_o	Off-state capacitance



MARKING



CP-8QC:Device Marking Code
1951:the 51th week,2019

ELECTRICAL CHARACTERISTICS (T_A=25°C, continued)

Part Number	I _{DRM} @V _{DRM}		V _S ^① @I _S		V _T @I _T		I _H	C _O ^②	Marking
	μA	V	V	mA	V	A	mA	pF	
	max		max	max	max	max	min	max	
CP0080QC	1	6	15	800	4	2.2	30	60	CP-8QC
CP0300QC	1	25	40	800	4	2.2	30	60	CP03QC
CP0640QC	1	58	77	800	4	2.2	120	60	CP06QC
CP0720QC	1	65	87	800	4	2.2	120	50	CP07QC
CP1300QC	1	120	160	800	4	2.2	120	50	CP13QC
CP1500QC	1	140	180	800	4	2.2	120	45	CP15QC
CP1800QC	1	170	220	800	4	2.2	120	45	CP18QC
CP2600QC	1	220	300	800	4	2.2	120	40	CP26QC

① V_S is measured at 100KV/s

② Off-state capacitance is measured in V_{DC}=2V, V_{RMS}=1V, f=1MHz

SURGE RATINGS

Series	I _{PP} (A) min			
	2/10μs	8/20μs	10/360μs	10/1000μs
C	500	400	175	100

ORDERING INFORMATION

Low capacitance SIDAC	CP	008	0	Q	C	Surge ratings
	Median voltage			Package type:DFN3333-2L		
			0:Bi-direction,1:Uni			

SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.2)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-190 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40 secs
Ramp-down Rate		5°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

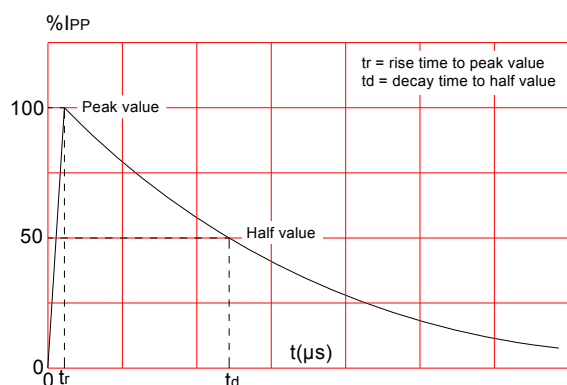
FIG.1: $t_r \times t_d$ pulse waveform

FIG.2: Reflow condition

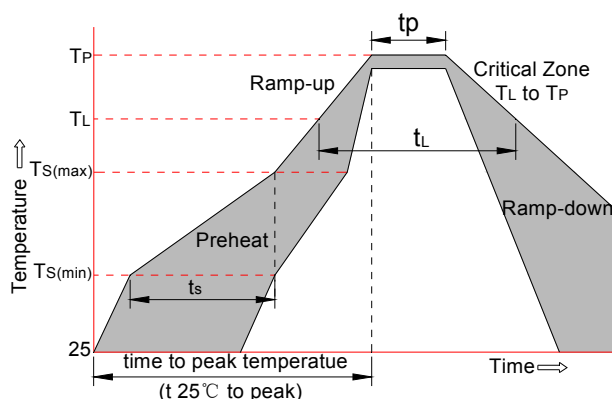
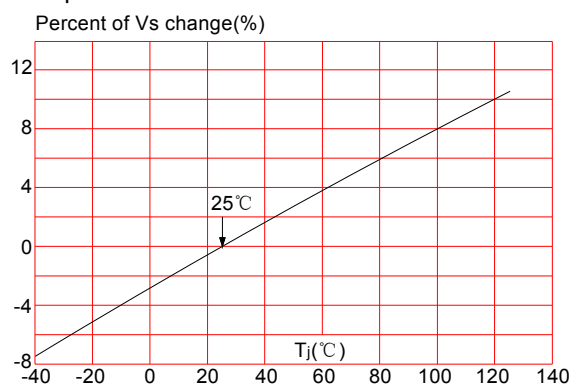
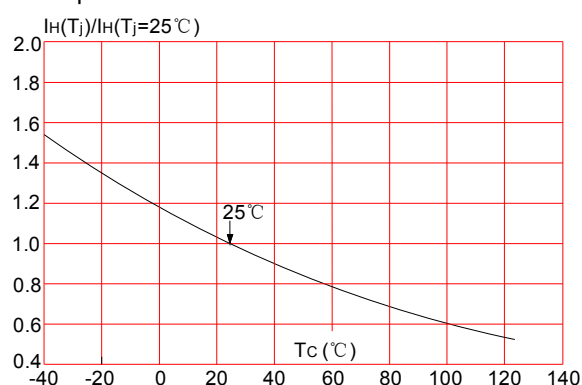
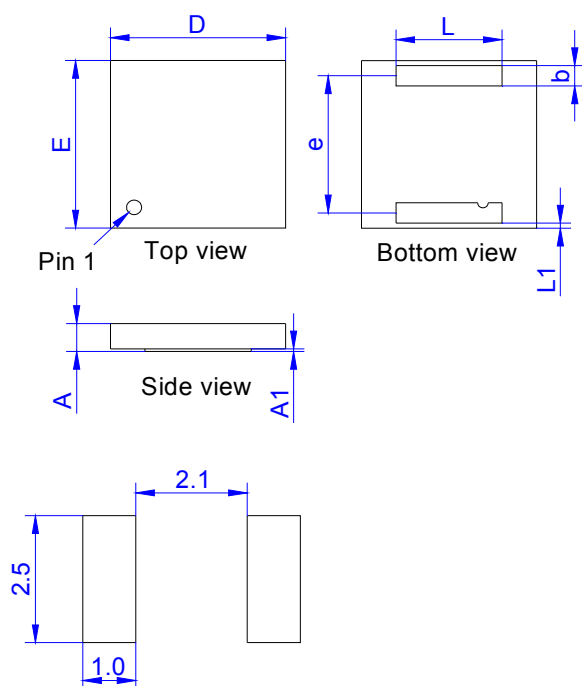


FIG.3: Normalized V_s change vs. junction temperature

FIG.4: Normalized DC holding current vs. case temperature


PACKAGE MECHANICAL DATA



Recommended solder pad layout(Unit:mm)

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.50		0.60	0.020		0.024
A1			0.005			0.0002
D	3.25	3.30	3.35	0.128	0.130	0.132
E	3.25	3.30	3.35	0.128	0.130	0.132
e	2.70BSC			0.106BSC		
b	0.35	0.40	0.45	0.014	0.016	0.018
L	1.95	2.00	2.05	0.077	0.079	0.081
L1	0.10REF			0.004REF		

ORDERING INFORMATION

PART No.	PACKAGE TYPE	QUANTITY(PCS) REEL	DESCRIPTION
CPxxxxQC	DFN3333-2L	5,000	13 inch reel pack

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