SOT-363 Plastic-Encapsulate ESD Protection Diodes

Features

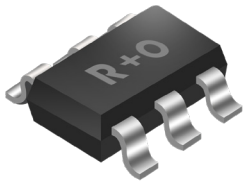
- Low leakage current
- SOT-363 surface mount package
- IEC 61000-4-2 (ESD Air): ±25kV
- IEC 61000-4-2 (ESD Contact): ±20kV
- IEC 61000-4-5 (Lightning 8/20μs): 5A

Reverse Working Voltage
5.0V Max.
Ultra Small Capacitance
$C_{I/O-GND}$=0.3pF(Typ.)
$C_{I/O-I/O}$=0.8pF(Max.)

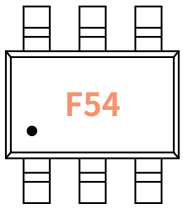
Applications

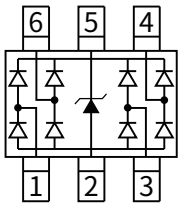
- Peripherals
- Industrial Equipment
- Notebook computers
- Portable Instrumentation
- Microprocessor Based Equipment
- Cell Phone Handsets and Accessories

SOT-363



Function Diagram



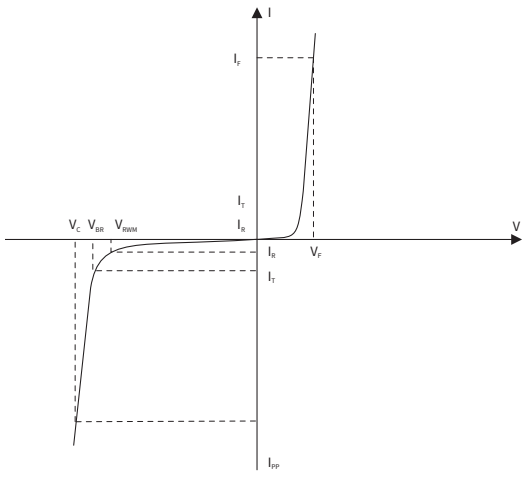


Maximum Ratings (Ta=25°C Unless otherwise specified)

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
V_{ESD}	Electrostatic Discharge Voltage	ESD per IEC 61000-4-2(Air)	±25	KV
		ESD per IEC 61000-4-2(Contact)	±20	KV
P_{PP}	Peak Pulse Power	tp = 8/20 μs	75	W
I_{PP}	Rated Peak Pulse Current	tp = 8/20 μs	5.0	A
T_J	Operating JunctionTemperature Range	—	-55 to +125	°C
T_{STG}	Storage Temperature Range	—	-55 to +150	°C

Electrical Parameter

SYMBOL	PARAMETER
V_C	Clamping Voltage @ I_{PP}
V_{BR}	Breakdown Voltage @ I_T
I_{PP}	Peak Pulse Current
I_T	Test Current
I_R	Reverse Leakage Current @ VRWM
V_{RWM}	Peak Reverse Working Voltage
P_{PP}	Peak Pulse Power Dissipation
C_J	Junction Capacitance @ V_R=0V,f=1MHz
I_F	Forward Current
V_F	Forward Voltage @I_F



Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	CONDITION	Min	Typ	Max	UNIT
Peak Reverse Working Voltage	V_{RWM}	T_a=25°C	—	—	5.0	V
Breakdown Voltage	V_{BR}	I_R=1mA,T_a=25°C	6.0	—	—	V
Reverse Leakage Current	I_R	V_R=5.0V,T_a=25°C	—	—	0.5	μA
Clamping Voltage	V_C	I_{PP}=1.0A, t_p=8/20μs	—	—	10	V
		I_{PP}=5.0A,t_p=8/20μs	—	—	15	
Junction Capacitance	C_J	V_{RMW}=0V,f=1MHz,I/O pin to GND	—	—	0.8	pF
		V_{RMW}=0V,f=1MHz,Between I/O pins	—	0.3	0.4	

Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

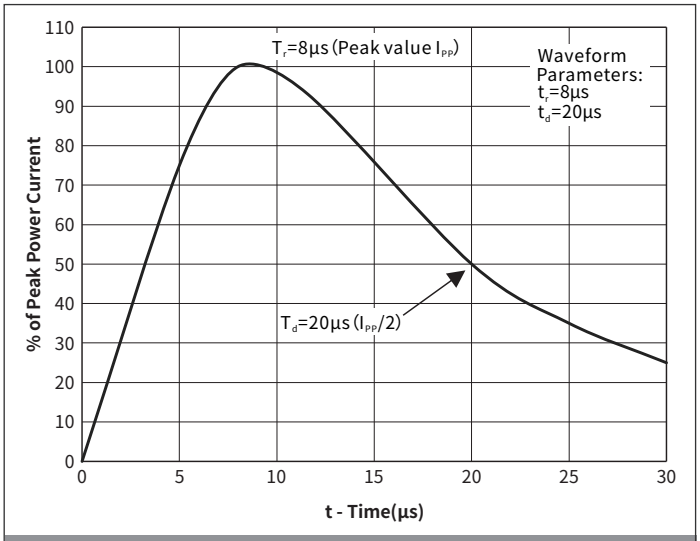


Fig.1 Pulse Waveform

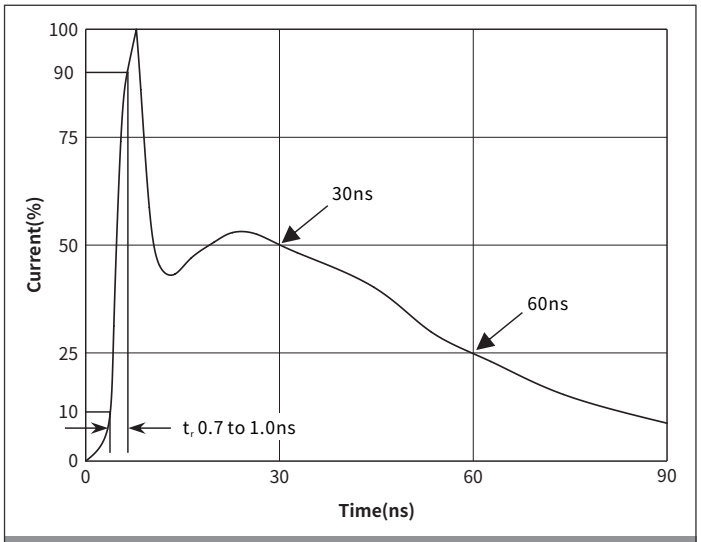


Fig.2 Pulse Waveform-ESD(IEC61000-4-2)

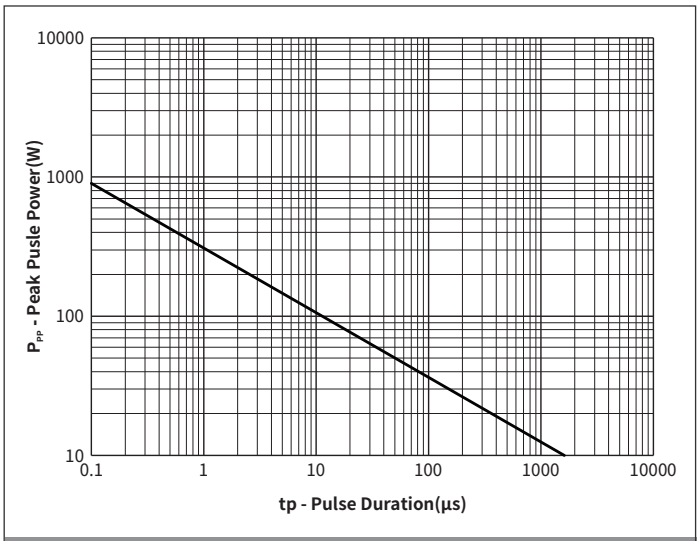


Fig.3 Peak Pulse Power vs. Pulse Time

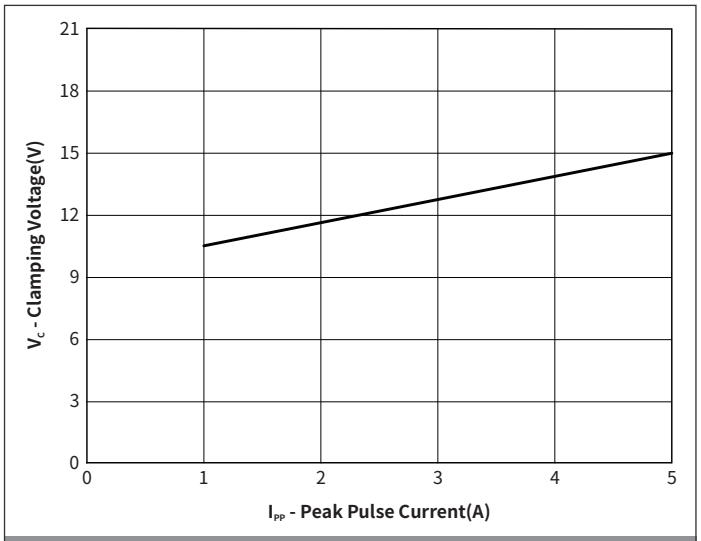


Fig.4 Clamping Voltage vs. Peak Pulse Current

H5VUT3UA

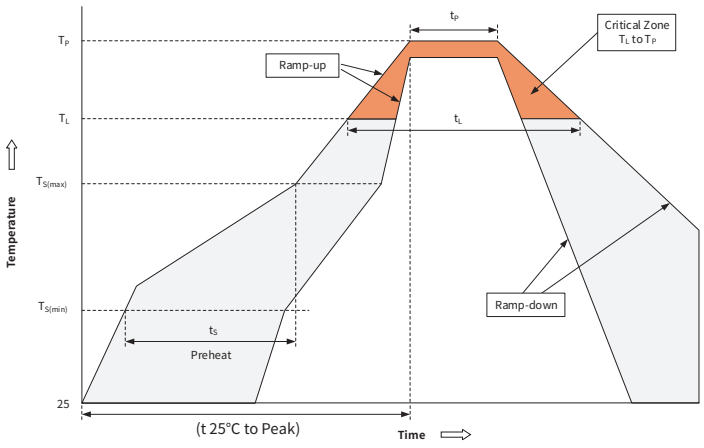
Uni-directional 5V Ultra Small Capacitance ESD

宏嘉诚科技 www.ichjc.com

Ordering Information

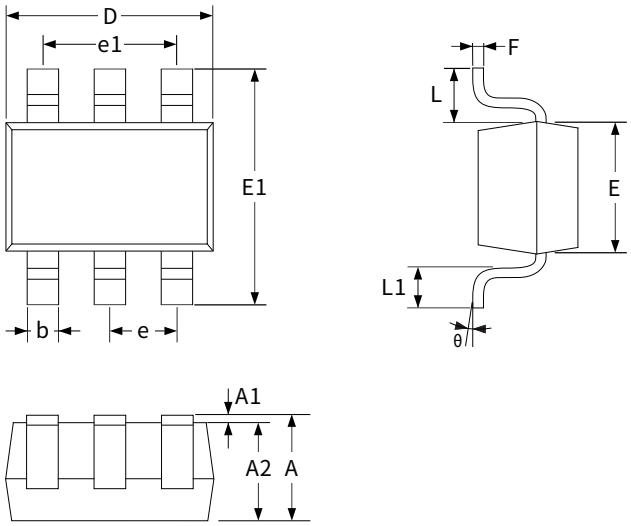
PREFERED P/N	PACKAGE	SIZE(mm)	DELIVERY MODE	MPQ(PCS)
H5VUT3UA	SOT-363	2.10×2.275×0.095	7"REEL	3000

Recommended Soldering Conditions



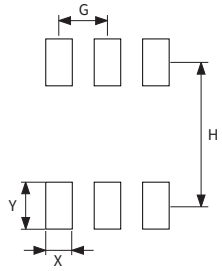
Profile Feature		Pb-Free Assembly
Pre-heat	Temperature Min ($T_{S(min)}$)	+150°C
	Temperature Max($T_{S(max)}$)	+200°C
	Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C /sec. Max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C /sec. Max
Reflow	Temperature(T_L)(Liquid us)	+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)		20-40secs
Ramp-down Rate		6°C /sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

Package Outline Dimensions (SOT-363)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.09	1.10	0.035	0.043
A1	-	0.10	-	0.004
A2	0.90	1.00	0.035	0.039
b	0.15	0.35	0.006	0.014
c	0.10	0.15	0.004	0.006
D	2.00	2.20	0.079	0.087
E	1.15	1.35	0.045	0.053
E1	2.15	2.40	0.085	0.094
e	0.650TYP		0.026TYP	
e1	1.20	1.40	0.047	0.055
L	0.525REF		0.021REF	
L1	0.26	0.46	0.010	0.018
θ	-	8°	-	8°

Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
G	-	0.65	-	0.025
H	-	1.94	-	0.076
X	0.40	-	0.016	-
Y	0.80	-	0.031	-