

Ultra-Low Capacitance TVS Diode Array

Feature Description

- Low operating voltage: 5.0V
- Low clamping voltage
- Ultra low capacitance: 0.3pF typical (I/O to I/O)
- Protects four I/O lines
- Flow-through design
- ESD PROTECTION for high speed data lines:
 - IEC 61000-4-2, level4 (ESD) immunity test
 - ±25KV (air discharge) and ±20KV (contact discharge)

Pin Description

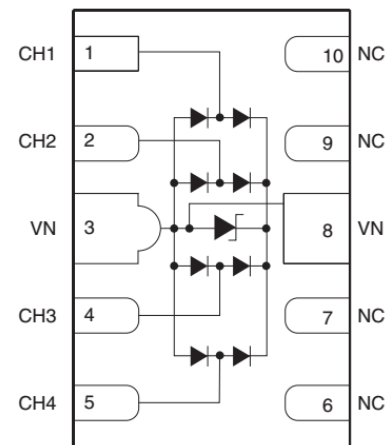


DFN 10L(2.51.0*0.50-0.50)

Main Product Characteristics

V _{RWM}	5V
P _{PP}	150W
I _{PP}	10A
C _j (I/O to GND)	0.6pF
T _j (max)	150°C

Pin Configuration



DFN 10L (Top View)

Applications

- USB 2.0 power and dataline protection
- Monitors and flat panel displays
- Video graphics cards
- Digital video interface
- Notebook computers

Ordering and Marking Information

HYE0505F XXX	Package Code C9: DFN 10L(2.51.0*0.50-0.50) Date Code XXX	Assembly Material G:Halogen Free
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Note: HUAYI lead-free products contain molding compounds/die attach materials and 100% matte tin plate Termination finish; which are fully compliant with RoHS. HUAYI lead-free products meet or exceed the lead-free requirements of IPC/JEDEC J-STD-020 for MSL classification at lead-free peak reflow temperature. HUAYI defines “Green” to mean lead-free (RoHS compliant) and halogen free (Br or Cl does not exceed 900ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500ppm by weight).

HUAYI reserves the right to make changes, corrections, enhancements, modifications, and improvements to this product and/or to this document at any time without notice.

Absolute Maximum Ratings Tc =25°C, Unless Otherwise Specified

Symbol	Parameter	Rating	Unit
Common Ratings (Tc=25°C Unless Otherwise Noted)			
P _{PP}	Peak Pulse Power (t _p =8/20us)	150	W
I _{PP}	Peak Pulse Current (t _p =8/20us)	10	A
T _J	Maximum operation and Junction Temperature Range	-55 to125	°C
T _{STG}	Device Storage Temperature Range	-55 to150	°C
ESD	ESD Rating per IEC 61000-4-2, Contact	±22	KV
ESD	ESD Rating per IEC 61000-4-2, Air	±25	KV

Electrical Characteristics(Tc =25°C Unless Otherwise Specified)

Symbol	Parameter	Test Conditions	HYE0505FC9			Unit
			Min	Typ.	Max	
V _{RWM}	Reverse Working Voltage	Between Pin5 to Pin2 T=25°C	-	-	5.0	V
V _{BR}	Reverse Breakdown Voltage	I _T =1mA, Between Pin5 to Pin2	6.0	-	-	V
I _R	Reverse Leakage Current	V _{RWM} =5.0V Between Pin5 to Pin2, T=25°C	-	-	1.0	uA
V _F	Diode Forward Voltage	I _F =10mA	-	0.8	1.0	V
V _C	Clamping Voltage	I _{PP} =1A, t _p =8/20us, any I/O pin to GND	-	8.5	12	V
	Clamping Voltage	I _{PP} =5A, t _p =8/20us, any I/O pin to GND	-	12	16	V
C _j	Junction Capacitance	V _R =0V, f=1MHz, Between I/O pins	-	0.3	0.4	pF
	Junction Capacitance	V _R =0V, f=1MHz, any I/O pin to GND	-	0.6	0.8	pF

Typical Operating Characteristics

Figure 1: Peak Pulse Power vs Pulse Time

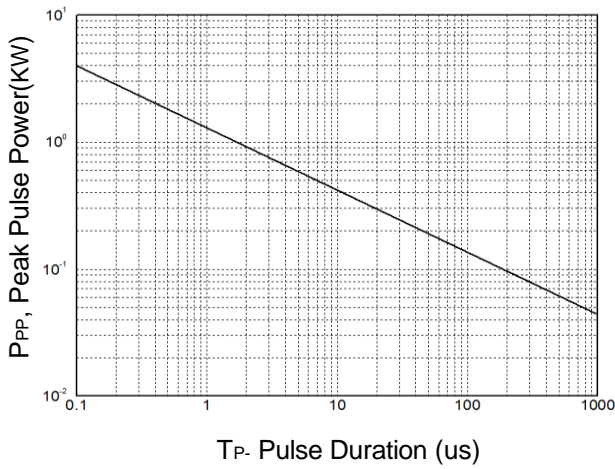


Figure 2: Power Derating Curve

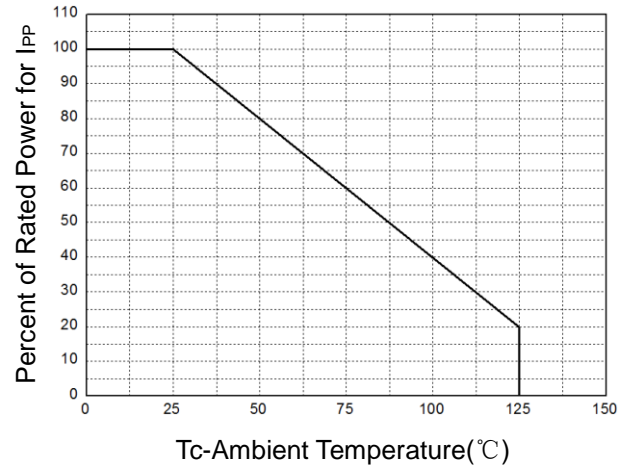


Figure 3: Clamping Voltage vs Peak Pulse Current

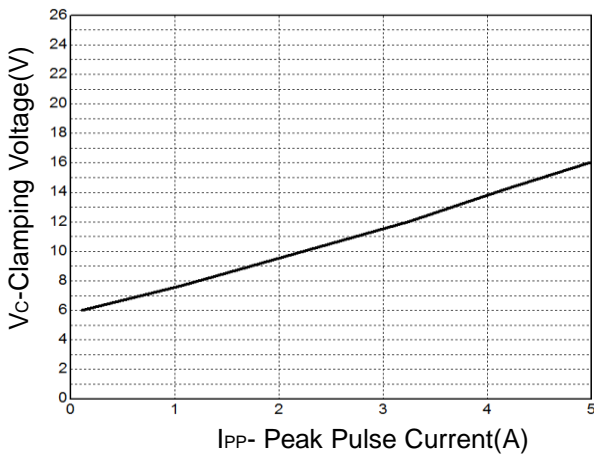


Figure 3: Junction Capacitance vs Reverse Voltage

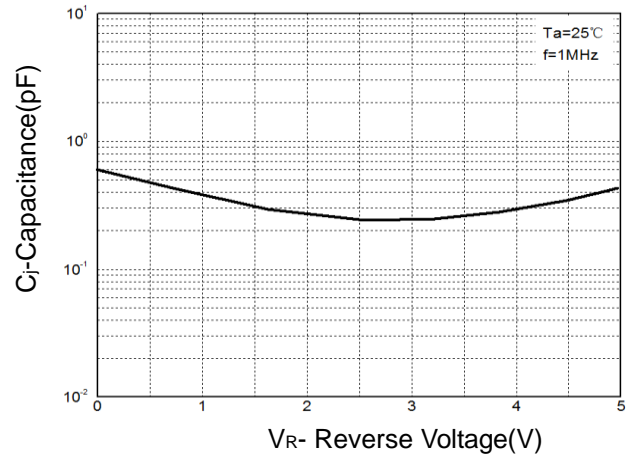


Figure 3: Forward Current vs Reverse Voltage

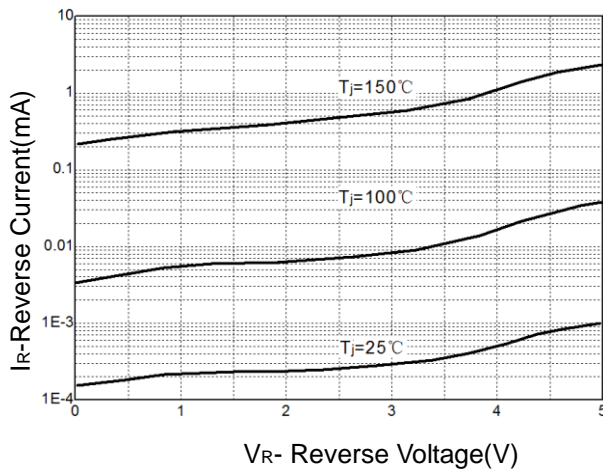
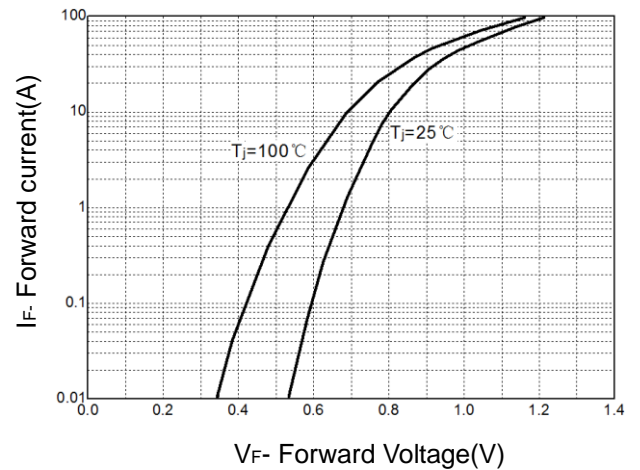
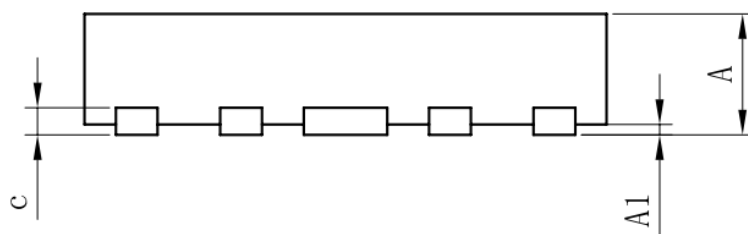
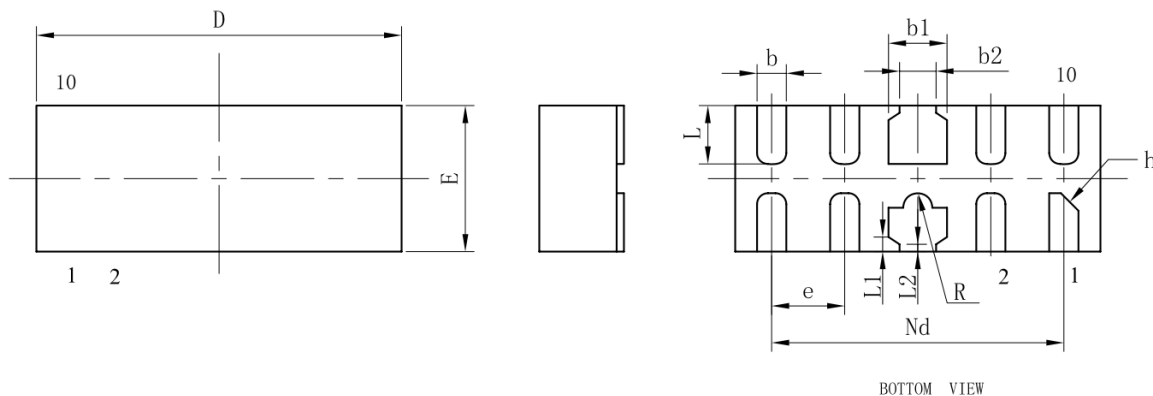


Figure 3: Forward Current vs Forward Voltage



Package Information:

DFN 10L(2.51.0*0.50-0.50)



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	0.45	0.50	0.55
A1	—	0.02	0.05
b	0.15	0.20	0.25
b1	0.35	0.40	0.45
b2	0.20	0.25	0.30
c	0.10	0.15	0.20
D	2.45	2.50	2.55
e	0.50BSC		
Nd	2.00BSC		
E	0.95	1.00	1.05
L	0.35	0.40	0.45
L1	0.075REF		
L2	0.05REF		
h	0.08	0.12	0.15
R	0.05	0.10	0.15
L/F载体尺寸 (mil)	22X30		

Ordering and Marking Information**Device Marking: HYE0505F**

Package (Available)
DFN10L
Operating Temperature Range
C : -55 to 150 °C

Devices per Unit

Package Type	Unit	Quantity
DFN 10L	Reel	3000

Customer ServiceWorldwide Sales and Service: sales@hymexa.comTechnical Support: Technology@hymexa.com

Xi'an Huayi Microelectronics Co., Ltd.

No.8928, Shangji Road, Economic and Technological Development Zone, Xi'an, China

TEL: (86-029) 86685706

FAX: (86-029) 86685705

E-mail: sales@hymexa.comWeb net: www.hymexa.com