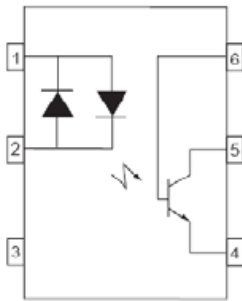


Feature:

- High Isolation voltage between input and output (Viso = 5000V rms)
- Creepage distance > 7.62mm
- Compact dual-in-line package
- Operating Temperature up to 100 °C
- Available in Tube or Tape and reel
- Available with standard DIP-6, Wide lead bend, and SMD lead bend options.
- Conventional black housing package
- AC input
- 6 pin transistor photo coupler

Schematic:

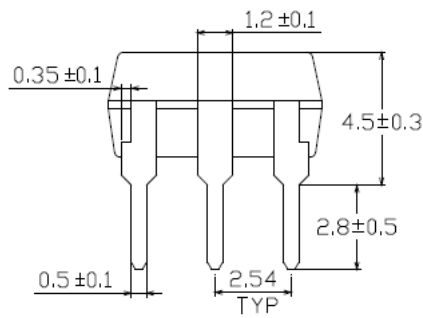
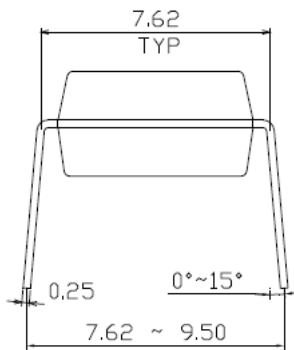
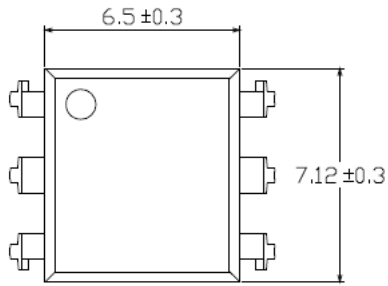
1. Anode / Cathode
2. Cathode / Anode
3. No Connection
4. Emitter
5. Collector
6. Base

Certification & Compliance:

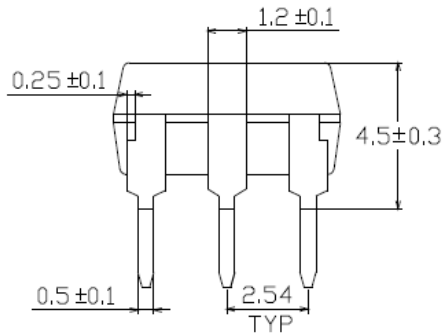
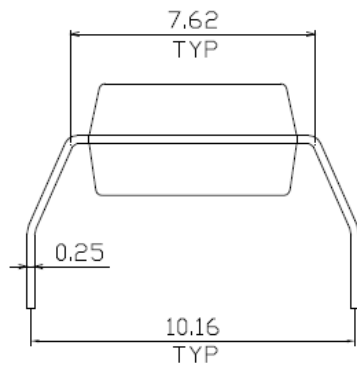
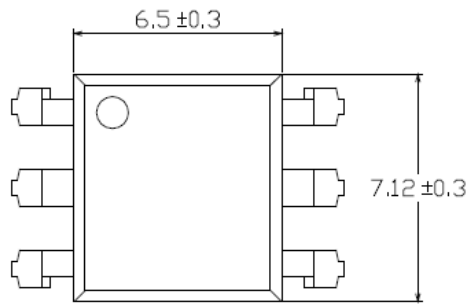
- Pb free and RoHS Compliant
- UL recognized (File # E338132)
- VDE recognized (File # 40030457)

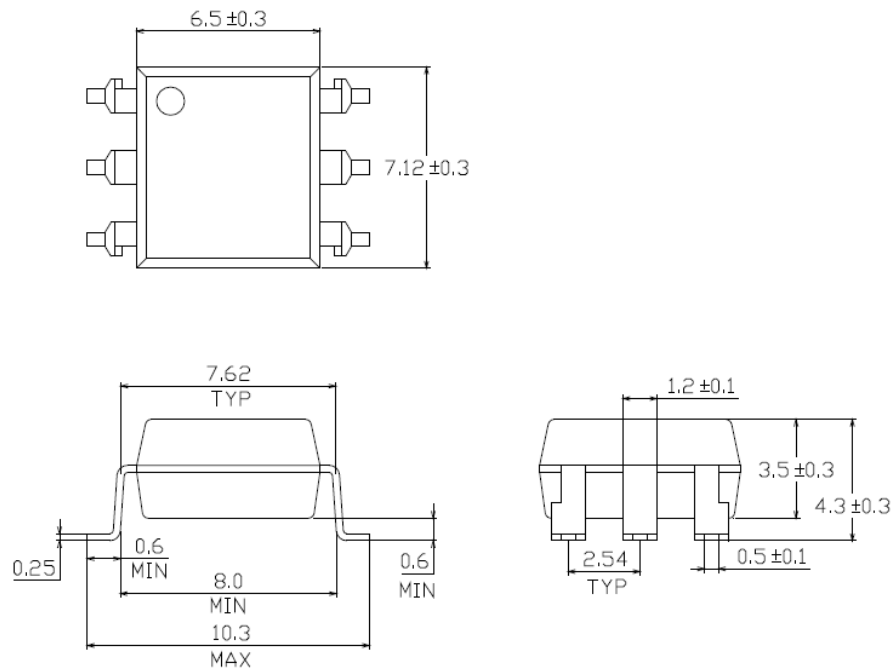


**Dimension: (Dot location indicates pin 1)
6-Pin Dip (standard):**



Wide lead bend (Option W):



SMD lead bend (Option S):

All Dimensions are in mm
Tolerance = ± 0.1 mm

Absolute Maximum Rating:

Symbol	Parameter	Rating	Units
		H11AAX series	
T _{STG}	Storage Temperature	-55 ~ 150	°C
T _{OPR}	Operating Temperature	-55 ~ 100	°C
T _{SOL}	Lead Solder Temperature	260 for 10 sec	°C
P _{TOT}	Total Power Dissipation	200	mW
EMITTER			
I _F	Continuous Forward Current	60	mA
I _{FM}	Peak forward current (t = 10 μS)	1	A
P _D	Power Dissipation	120	mW
	Power Dissipation Derated above 25°C	1.41	mW/°C
DETECTOR			
V _{CEO}	Collector–Emitter Voltage	80	V
V _{CBO}	Collector-Base Voltage	80	V
V _{ECO}	Emitter-Collector Voltage	7	V
P _C	Collector Power Dissipation	150	mW
	Collector Power Dissipation Derated above 25 °C	1.76	mW/°C

Electrical Characteristic ($T_A=25\text{ }^\circ\text{C}$)**Emitter**

Symbol	Characteristic	Test Condition	Range			Unit
			Min	Typ	Max	
V_F	Forward Voltage	$I_F = \pm 10\text{mA}$	-	1.2	1.5	V
C_t	Input Capacitance	$V = 0, f = 1\text{MHz}$	-	80	-	pF

Detector

Symbol	Characteristic	Test Condition	Range			Unit
			Min	Typ	Max	
I_{CEO}	Collector-Emitter Dark current	$V_{CE} = 10\text{V}, I_F = 0\text{mA}$	-	-	100	nA
BV_{CEO}	Collector-Emitter breakdown voltage	$I_c = 1.0\text{mA}$	80	-	-	V
BV_{CBO}	Collector-Base breakdown voltage	$I_c = 0.1\text{mA}$	80	-	-	V
BV_{ECO}	Emitter-Collector breakdown voltage	$I_E = 0.1\text{mA}$	7	-	-	V
C_{CE}	Collector-Emitter capacitance	$V_{CE} = 0\text{V}, f = 1\text{MHz}$	-	10	-	pF

DC Transfer Characteristic:

Symbol	Characteristic	Device	Test Condition	Range			Unit
				Min	Typ	Max	
CTR	Current Transfer Ratio	H11AA1	$I_F = \pm 10\text{mA}, V_{CE} = 10\text{V}$	20	-	-	%
		H11AA2		10	-	-	
		H11AA3		50	-	-	
		H11AA4		100	-	-	
	CTR Symmetry			0.5	-	2.0	
$V_{CE(Sat)}$	Collector-Emitter saturation voltage		$I_F = \pm 10\text{mA}, I_C = 0.5\text{mA}$	-	-	0.4	V

AC Characteristic:

t_r	Rise time		$V_{CC} = 10\text{V},$ $I_C = 10\text{mA},$ $R_L = 100\Omega$	-	-	10	μs
t_f	Fall time			-	-	10	
T_{on}	Turn-on time			-	-	10	
T_{off}	Turn-off time			-	-	10	

Isolation Characteristic

R_{ISO}	Isolation Resistance		$V_{IO} = 500\text{Vdc},$	10^{11}	-	-	Ω
C_{ISO}	Isolation Capacitance		$V_{IO} = 0, f = 1\text{MHz}$	-	0.7	-	pF
V_{ISO}	Isolation Voltage		$f = 60\text{Hz}, t = 1\text{min}, I_{I-O} \leq 2 \mu\text{A}$	5000	-	-	V rms

Characteristic Curves:

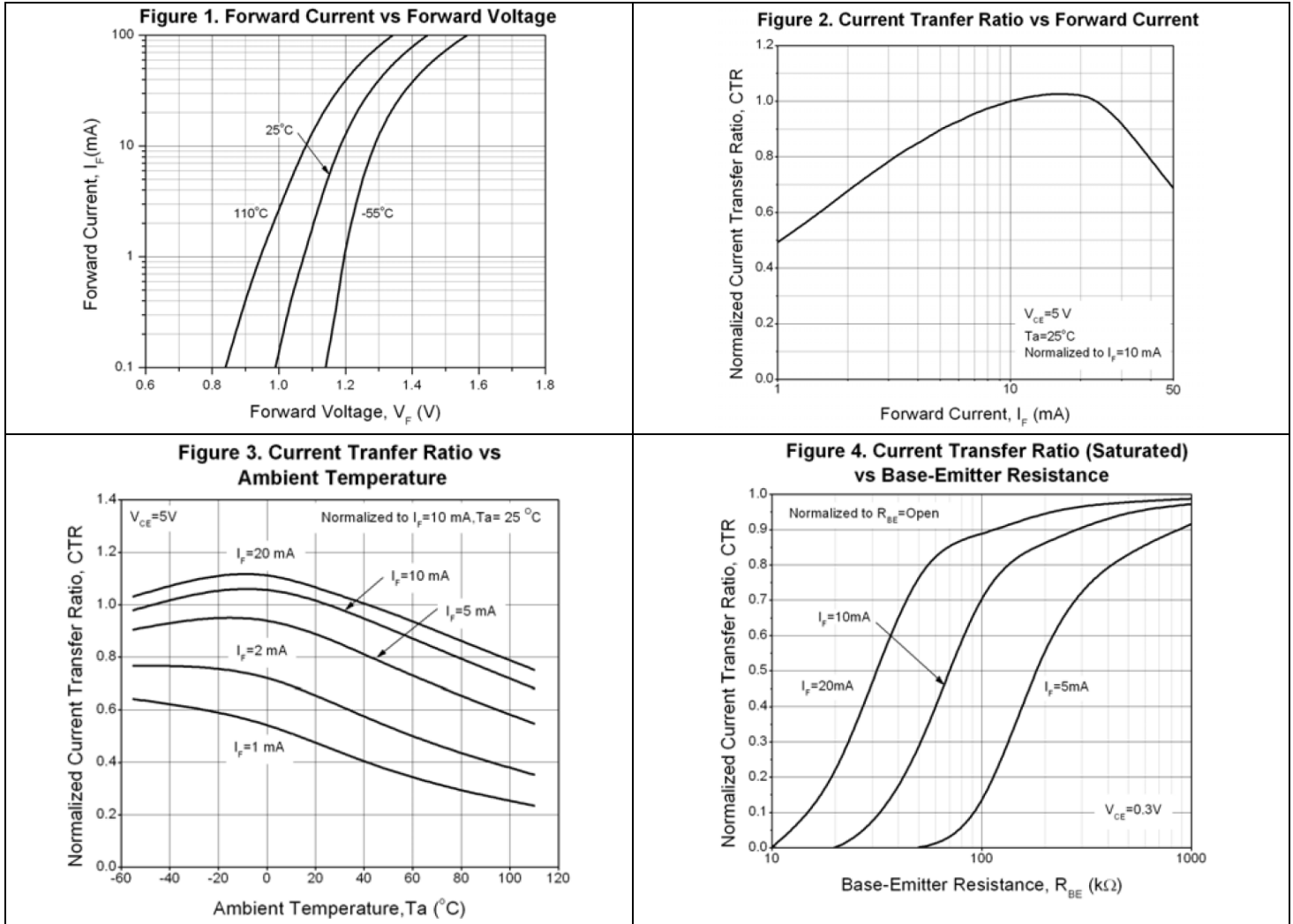


Figure 5. Current Transfer Ratio (Unsatrated) vs Base-Emitter Resistance

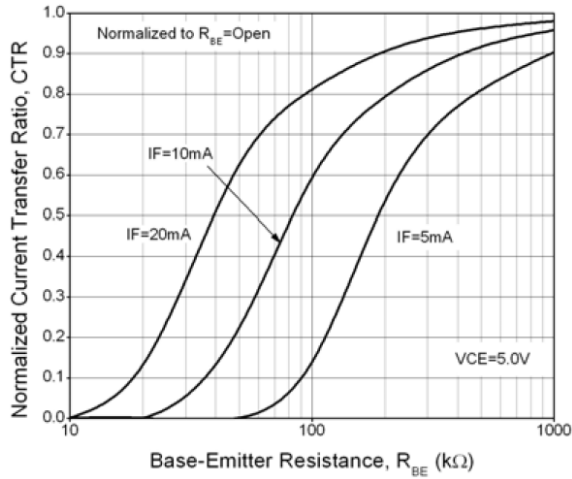


Figure 6. Dark Current vs Ambient Temperature

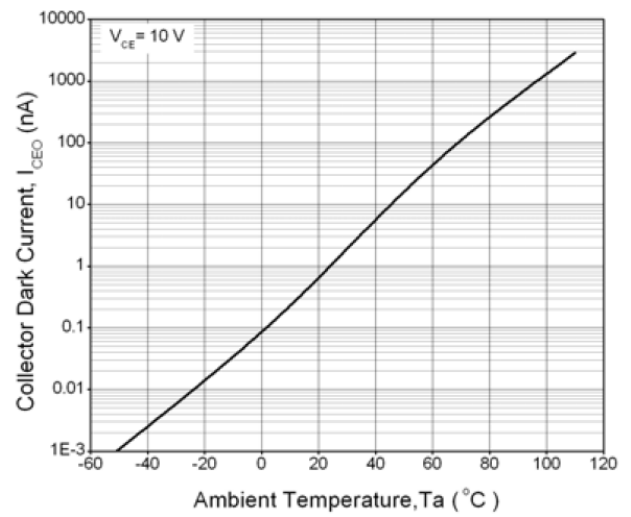


Figure 7. Collector-Emitter Saturation Voltage vs Collector Current

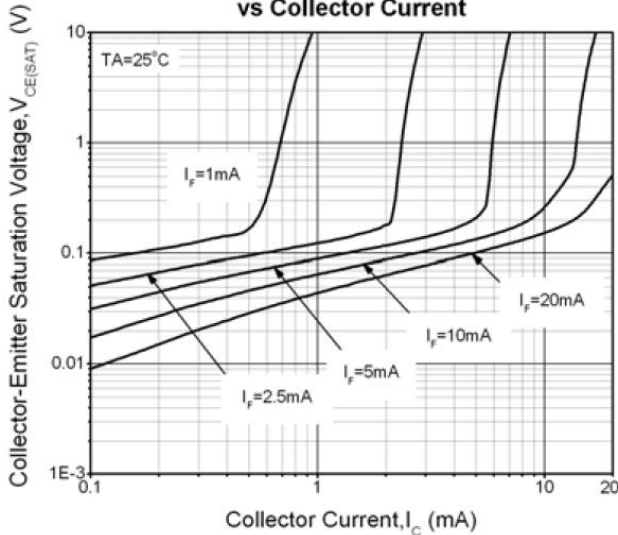
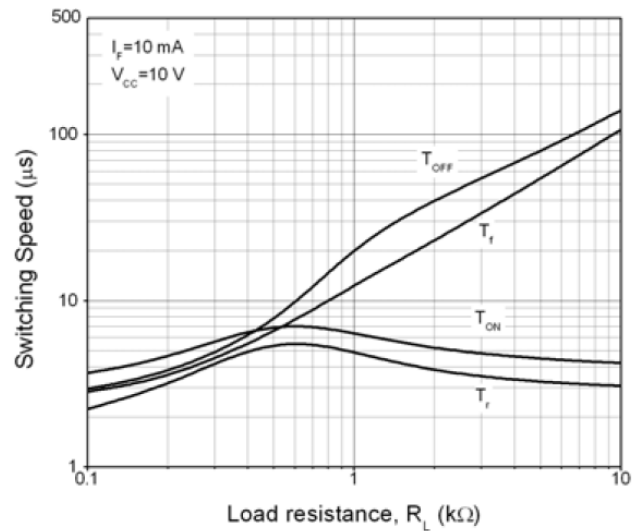
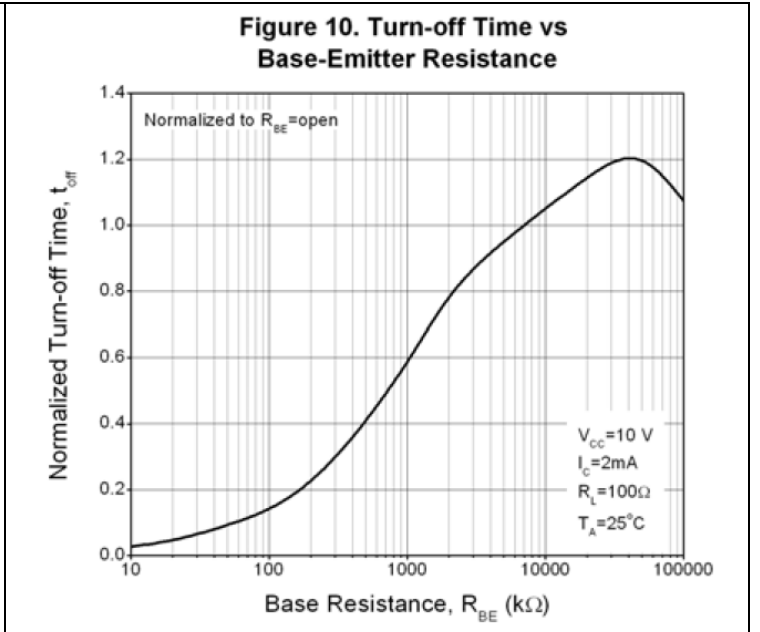
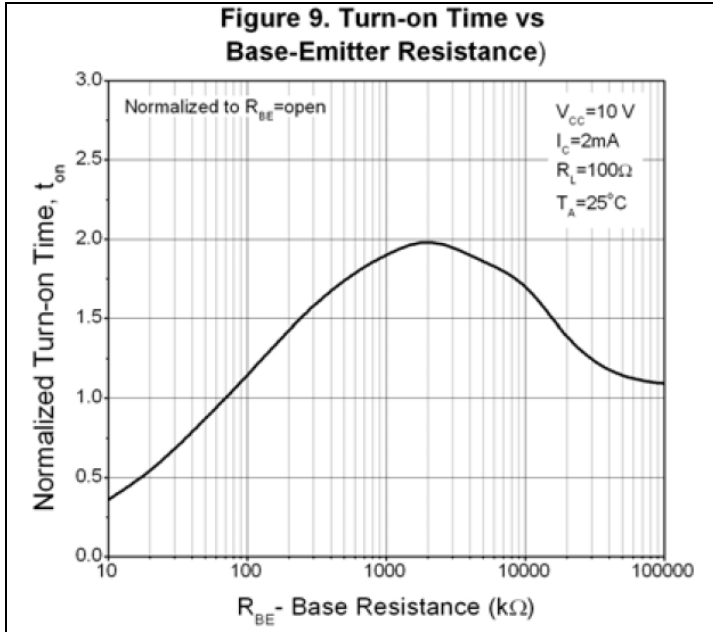
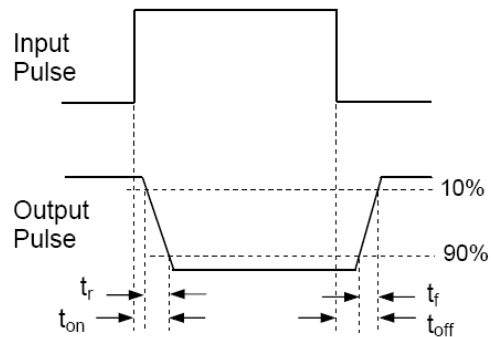
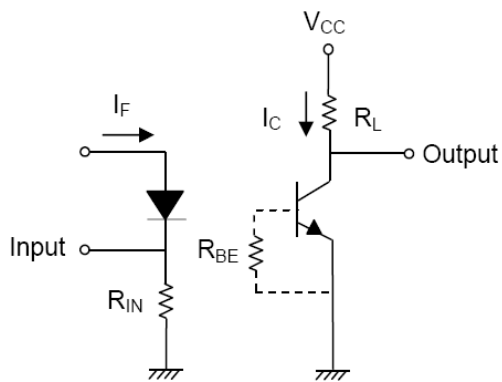


Figure 8. Switching Time vs Load Resistance

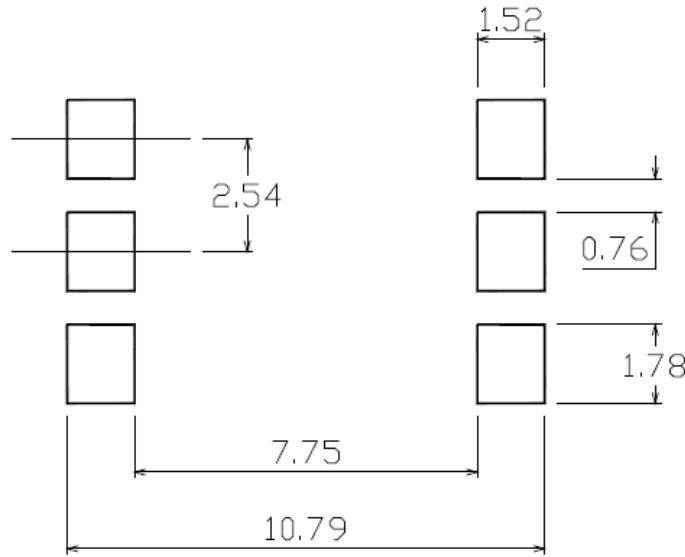
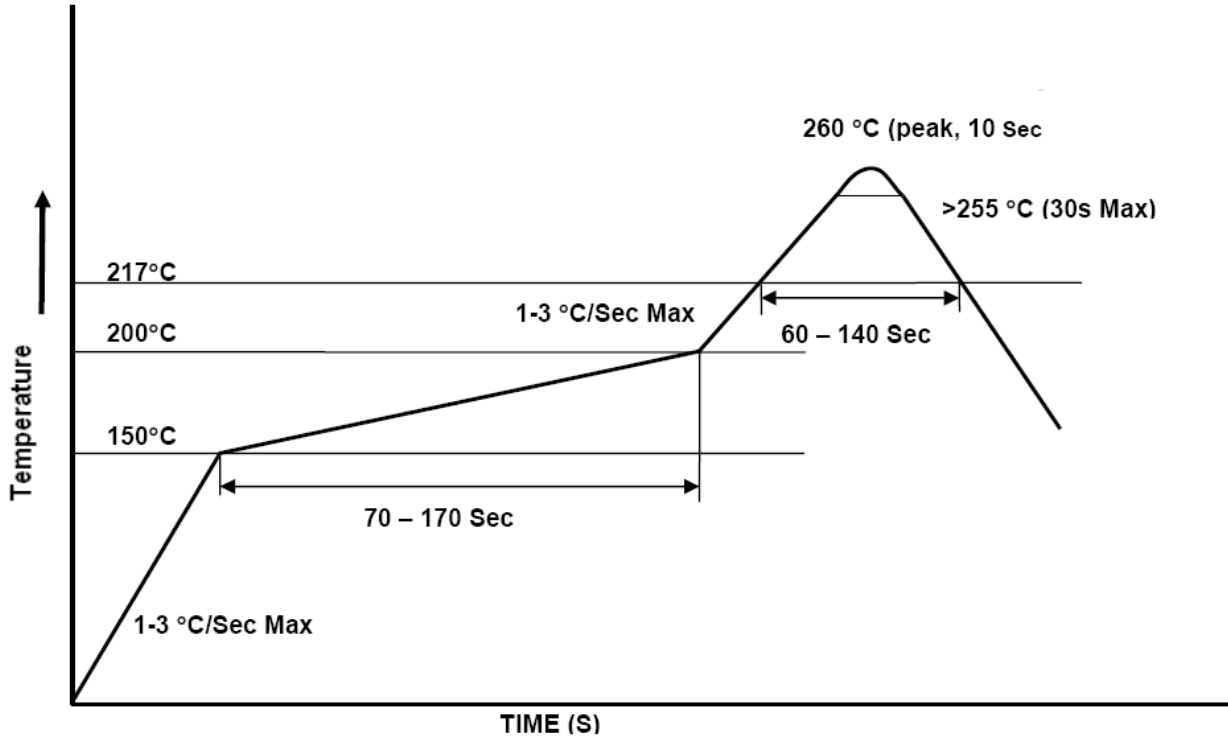




Test Circuit for Response Time:



Solder Profile & Footprint:

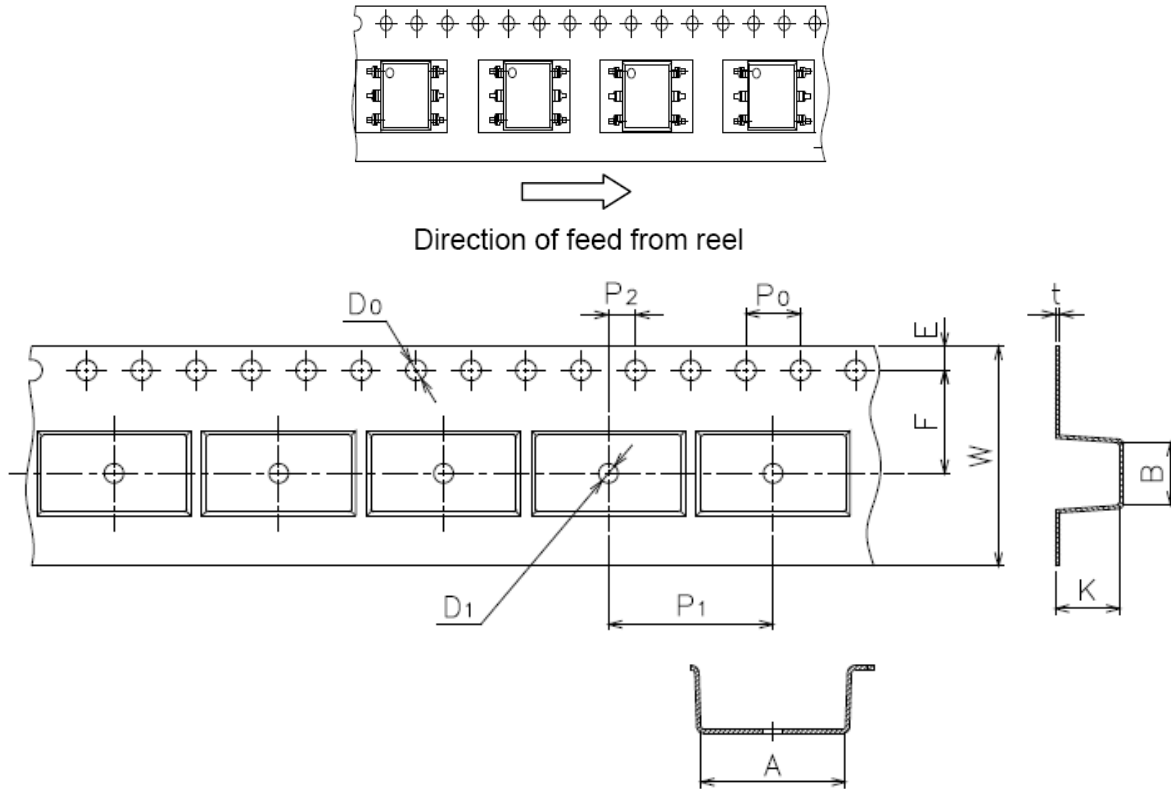


Recommended Solder Footprint for SMD Leadform

Units: mm
+/- 0.1mm

tolerance:

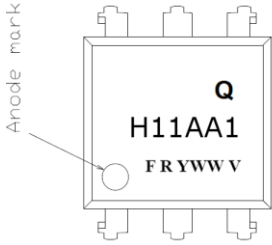
**Packing & Labeling:
Tape Dimension:**



Dimension No.	A	B	Do	D1	E	F
Dimension (mm)	10.4±0.1	7.52±0.1	1.5±0.1	1.5+0.1/-0	1.75±0.1	7.5±0.1

Dimension No.	P0	P1	P2	t	W	K
Dimension (mm)	4.0±0.15	16.0±0.1	2.0±0.1	0.35±0.03	16.0±0.2	4.5±0.1

Device Marking:



- Q = QT-Brighttek Corporation
- H11AA1 = Device Part Number
- F = Country of Origin
- R = Binning Option
- Y = Year
- WW = Week
- V = VDE Option

Ordering Information:

Part Number	Orderable Part Number	Options	Description	Quantity per packing
H11AA1	H11AA1	None	Standard 6pin Dip	60 pcs/tube
	H11AA1V	None	Standard 6pin Dip + VDE marking	60 pcs/tube
	H11AA1W	W	Wide lead bend (0.4 inch spacing)	60 pcs/tube
	H11AA1WV	W	Wide lead bend (0.4 inch spacing) +VDE marking	60 pcs/tube
	H11AA1STA	S	SMD lead form	1000 pcs / reel
	H11AA1STAV	S	SMD lead form + VDE marking	1000 pcs / reel
H11AA2	H11AA2	None	Standard 6pin Dip	60 pcs/tube
	H11AA2V	None	Standard 6pin Dip + VDE marking	60 pcs/tube
	H11AA2W	W	Wide lead bend (0.4 inch spacing)	60 pcs/tube
	H11AA2WV	W	Wide lead bend (0.4 inch spacing) +VDE marking	60 pcs/tube
	H11AA2STA	S	SMD lead form	1000 pcs / reel
	H11AA2STAV	S	SMD lead form + VDE marking	1000 pcs / reel

H11AA3	H11AA3	None	Standard 6pin Dip	60 pcs/tube
	H11AA3V	None	Standard 6pin Dip + VDE marking	60 pcs/tube
	H11AA3W	W	Wide lead bend (0.4 inch spacing)	60 pcs/tube
	H11AA3WV	W	Wide lead bend (0.4 inch spacing) +VDE marking	60 pcs/tube
	H11AA3STA	S	SMD lead form	1000 pcs / reel
	H11AA3STAV	S	SMD lead form + VDE marking	1000 pcs / reel
H11AA4	H11AA4	None	Standard 6pin Dip	60 pcs/tube
	H11AA4V	None	Standard 6pin Dip + VDE marking	60 pcs/tube
	H11AA4W	W	Wide lead bend (0.4 inch spacing)	60 pcs/tube
	H11AA4WV	W	Wide lead bend (0.4 inch spacing) +VDE marking	60 pcs/tube
	H11AA4STA	S	SMD lead form	1000 pcs / reel
	H11AA4STAV	S	SMD lead form + VDE marking	1000 pcs / reel

Revision History:

Description:	Revision #	Revision Date
Initial release of H11AAX series DS	1.0	4/12/2010
Feature, certification & compliance and ordering information updates	1.1	02/01/2011

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.