1A General Purpose Rectifier

DI4005SH

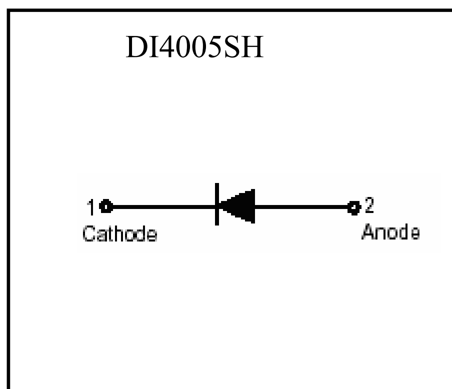
Features

- High current capability
- Low power loss, high efficiency
- Ultra high-speed switching
- Low profile surface mounted package in order to minimize board space
- Pb-free package

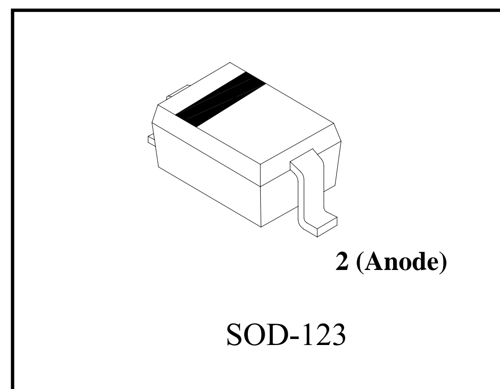
Mechanical data

- Case : Molded plastic, JEDEC SOD-123.
- Epoxy : UL94-V0 rated flame retardant
- Terminals : Plated terminals, solderable per MIL-STD-202 method 208
- Polarity : Indicated by cathode band
- Mounting position : Any
- Weight : approx. 0.04 gram

Symbol



Outline



Absolute Maximum Ratings (T_A=25℃, unless otherwise noted)

Parameters	Conditions	Symbol	Min	Typ	Max	Units
Repetitive peak reverse voltage		V_{RRM}			500	V
RMS voltage		V_{RMS}			350	V
Continuous reverse voltage		V_R			500	V
Forward rectified current	Single phase half wave, 60Hz @T_J=25˚C	$I_{F(AV)}$			1	A
Forward surge current	8.3ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}			10	A
Thermal resistance	Junction to Ambient	$R_{θJA}$		250		°C/W
Storage temperature range		Tstg	-55		150	°C
Operating junction temperature range		Tj	-55		150	°C

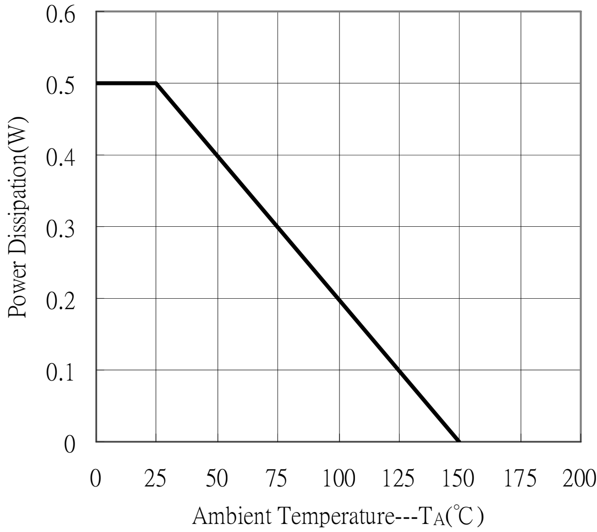
Characteristics (T_A=25°C, unless otherwise noted)

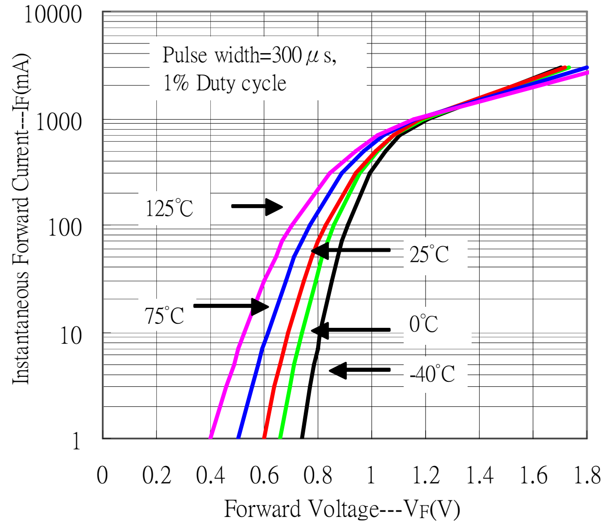
Characteristic	Symbol	Condition	Min.	Typ	Max.	Unit
	V_R	I_R=100μA	500	-	-	V
Forward Voltage	V_F 1	I_F=100mA	-	-	0.9	V
	V_F 2	I_F=1A	-	-	1.25	
Reverse Leakage Current	I_R	V_R=500V	-	-	100	nA
	I_R	V_R=500V, T_A=125°C	-	-	10	μA
Junction Capacitance	C_J	V_R=1V, f=1MHz	-	5	-	pF

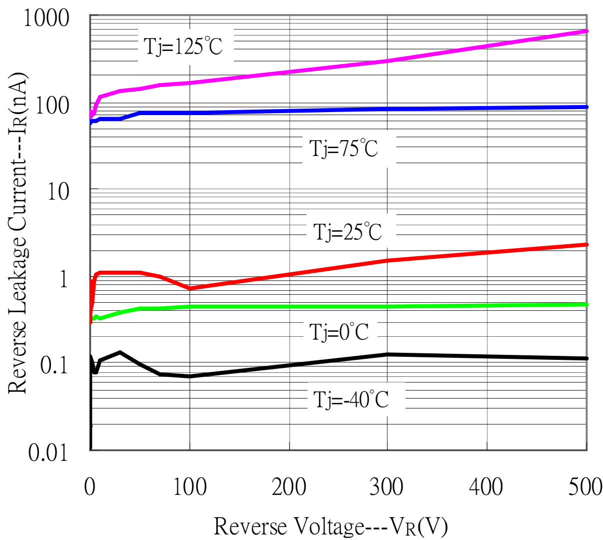
Ordering Information

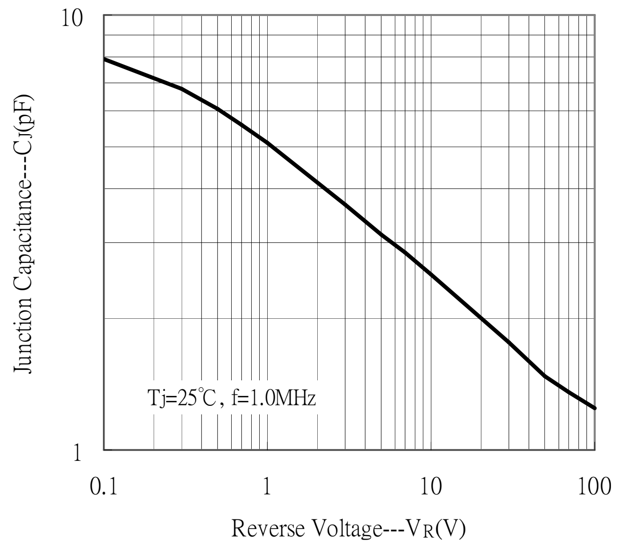
Device	Package	Shipping
DI4005SH-0-T1-G	SOD-123 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Typical Characteristics

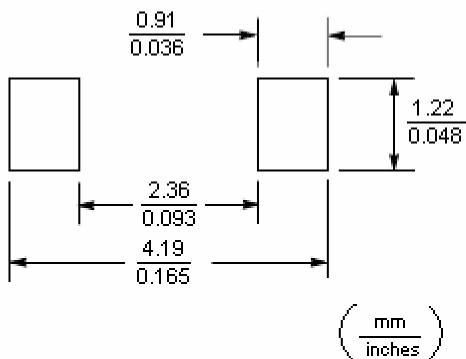




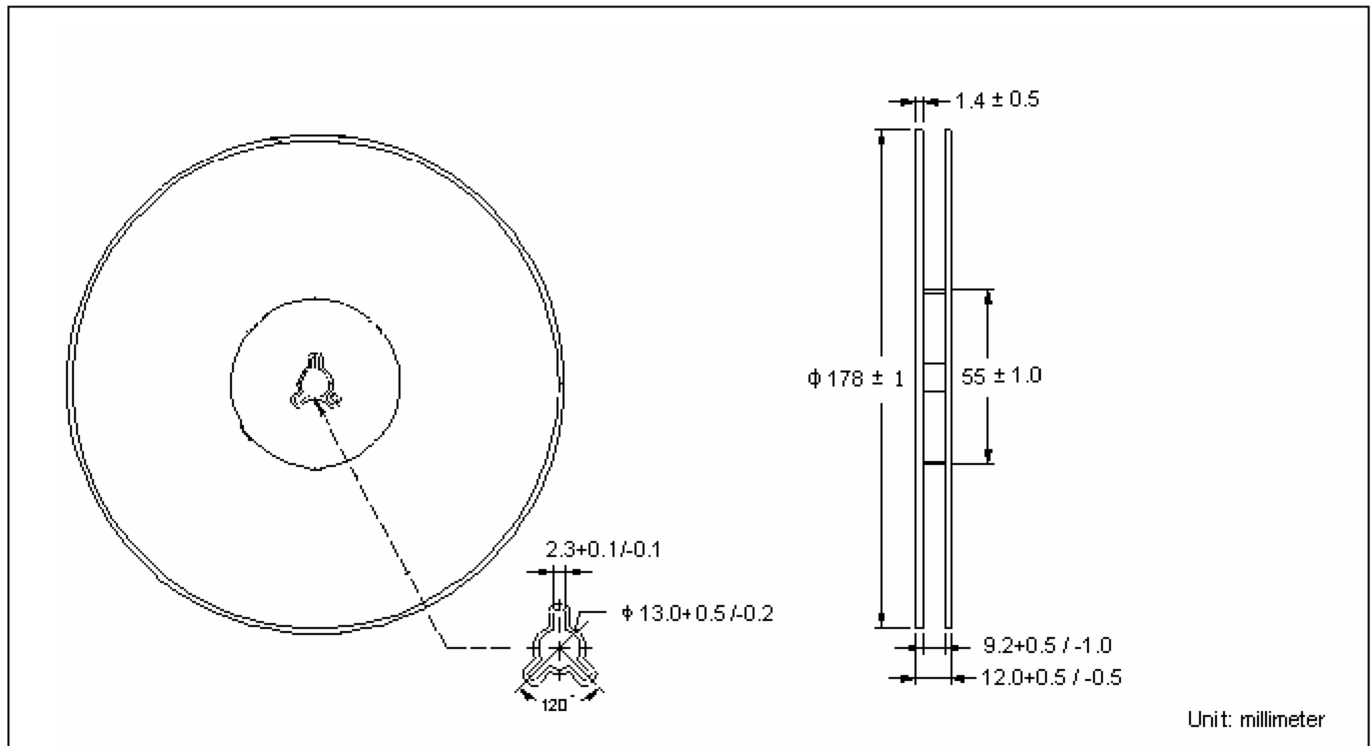




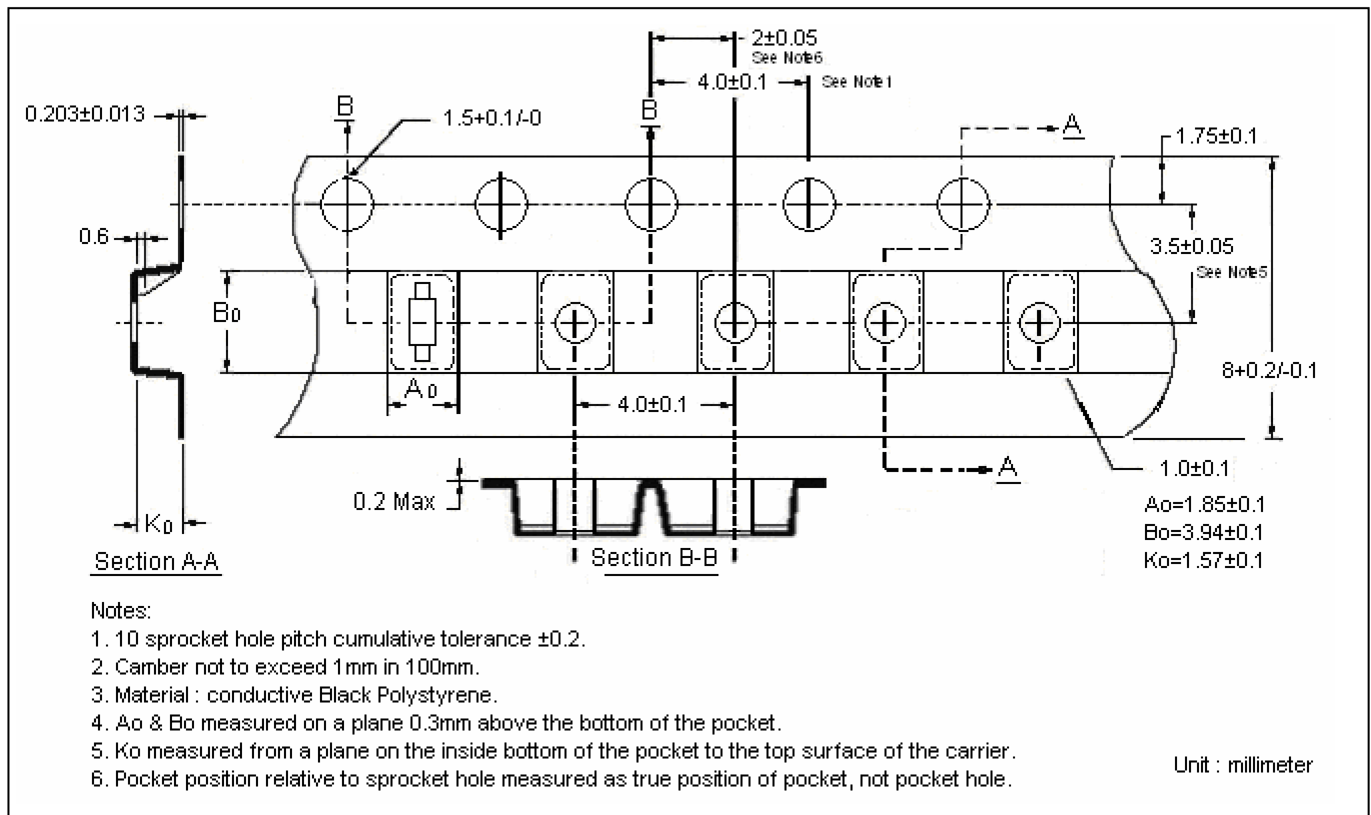
Recommended Soldering Footprint



Reel Dimension



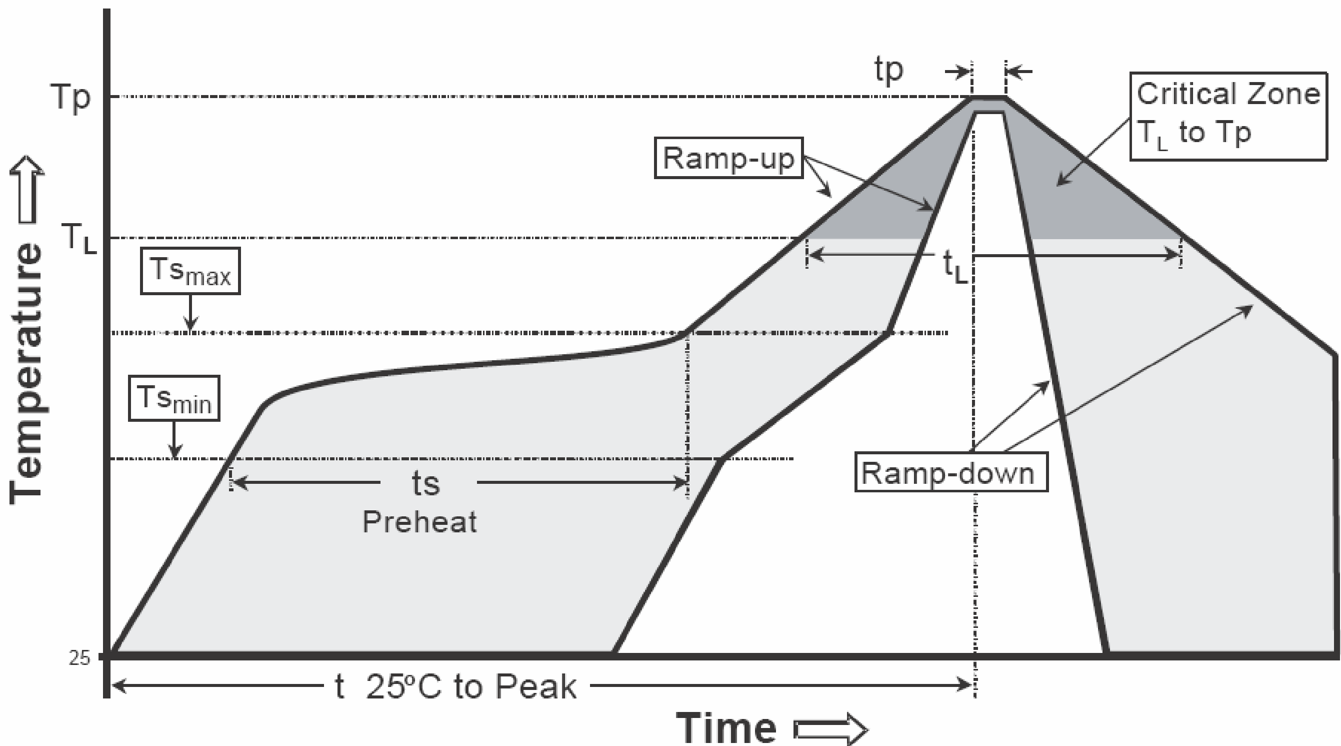
Carrier Tape Dimension



Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

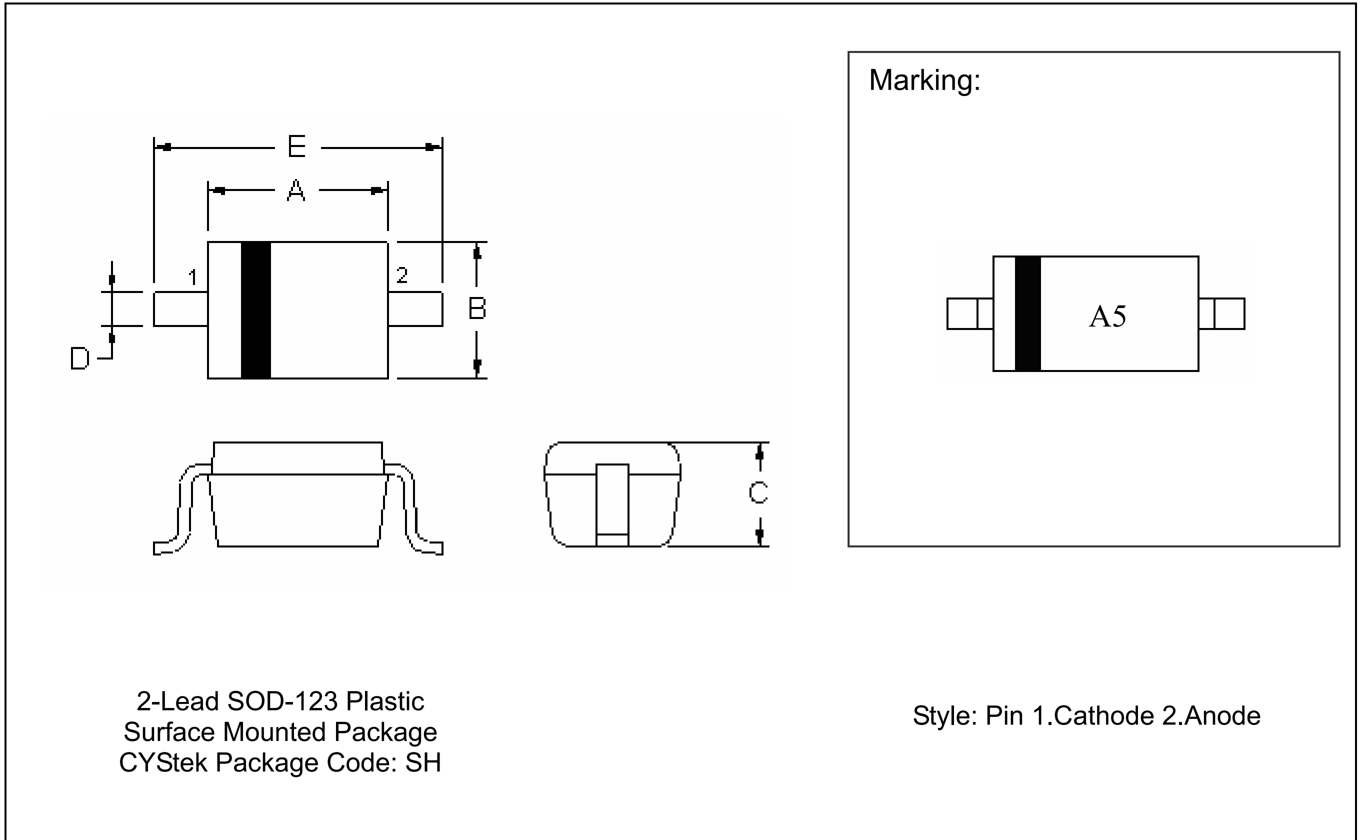
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(T_S min) −Temperature Max(T_S max) −Time(ts_{min} to ts_{max})	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (T_L) − Time (t_L)	 183°C 60-150 seconds	 217°C 60-150 seconds
Peak Temperature(T_P)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

SOD-123 Dimension



2-Lead SOD-123 Plastic
Surface Mounted Package
CYStek Package Code: SH

Style: Pin 1.Cathode 2.Anode

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.102	0.110	2.600	2.800	D	0.018	0.026	0.450	0.650
B	0.059	0.067	1.500	1.700	E	0.140	0.152	3.550	3.850
C	0.041	0.049	1.050	1.250					

Notes: 1.Controlling dimension : millimeters.
2.Lead thickness specified per L/F drawing with solder plating.
3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material:

- Lead: Pure tin plated.
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0.

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