

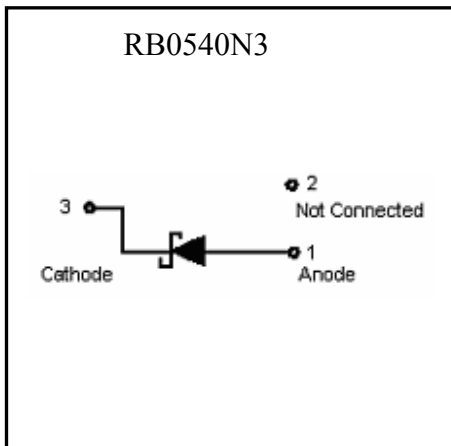
0.5A surface mount Schottky diode

RB0540N3

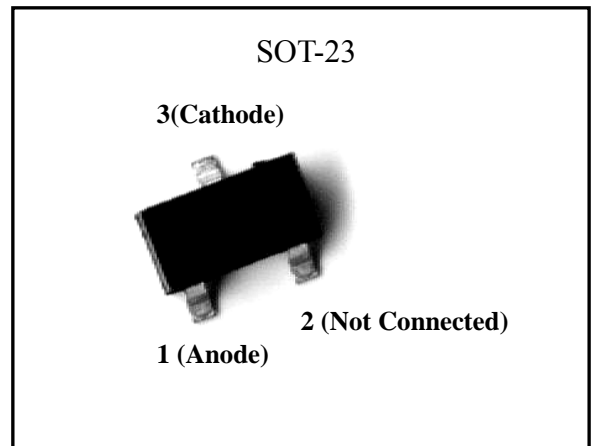
Features

- High current capability, low forward voltage drop
- High surge current capability
- Guardring for over voltage protection
- Low power loss, high efficiency
- Ultra high-speed switching
- Low profile surface mounted package in order to minimize board space
- Pb-free lead plating and halogen-free package

Symbol



Outline





Absolute Maximum Ratings (TA=25°C, unless otherwise noted)

Parameters	Conditions	Symbol	Min	Typ	Max	Units
Repetitive peak reverse voltage		V _{RRM}			40	V
RMS voltage		V _{RMS}			28	V
Continuous reverse voltage		V _R			40	V
Forward rectified current		I _O			0.5	A
	Single phase half wave, 60Hz @T _J =25°C	I _{F(AV)}			1	
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}		556		°C/W
Storage temperature range		T _{stg}	-65		150	°C
Operating junction temperature range		T _j	-50		125	°C

Characteristics (TA=25°C)

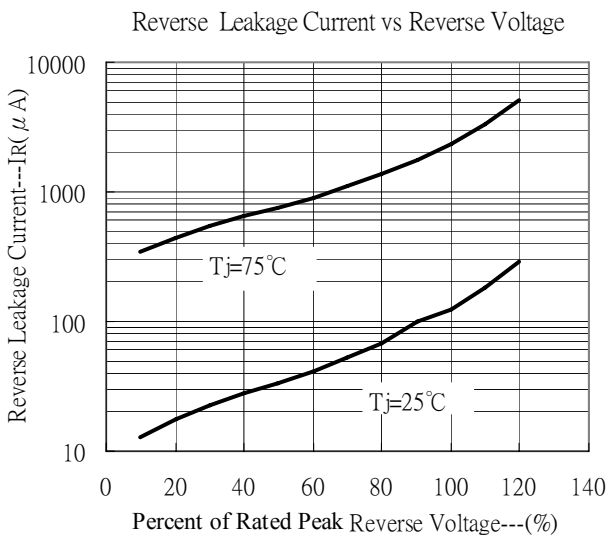
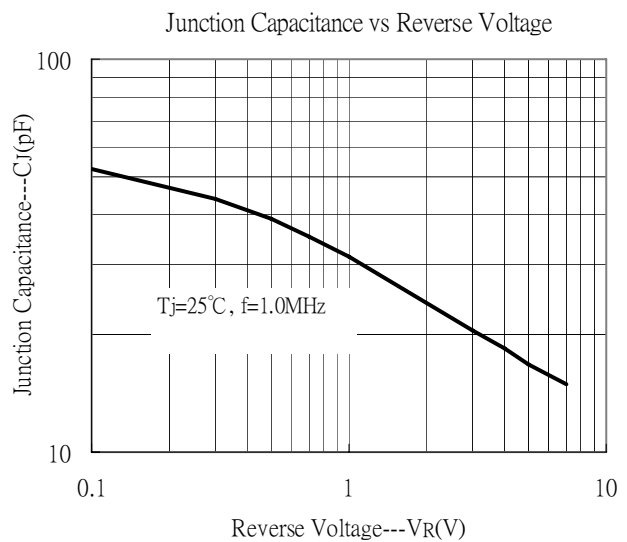
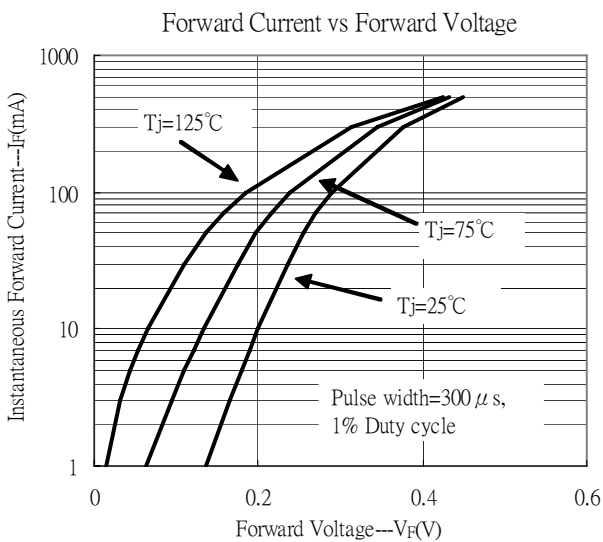
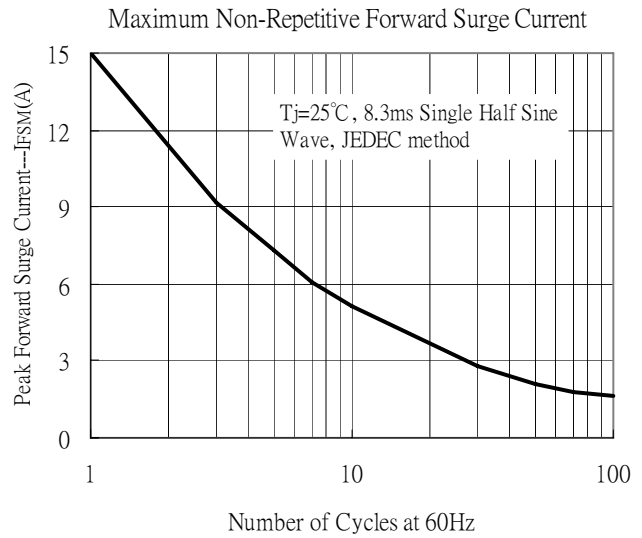
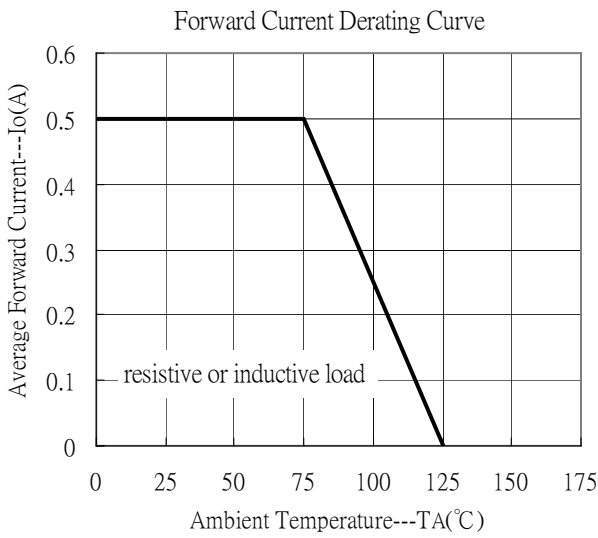
Characteristic	Symbol	Condition	Min.	Typ	Max.	Unit
	V _R	I _R =600μA	40	-	-	V
Forward Voltage	V _{F 1}	I _F =100mA	-	-	370	mV
	V _{F 2}	I _F =500mA	-	-	500	
Reverse Leakage Current	I _{R 1}	V _R =20V	-	-	100	μA
	I _{R 2}	V _R =40V	-	-	500	μA
	I _{R 3}	V _R =40V, T _A =75°C	-	-	10	mA
Junction Capacitance	C _J	V _R =4V, f=1MHz	-	18.3	-	pF

Ordering Information

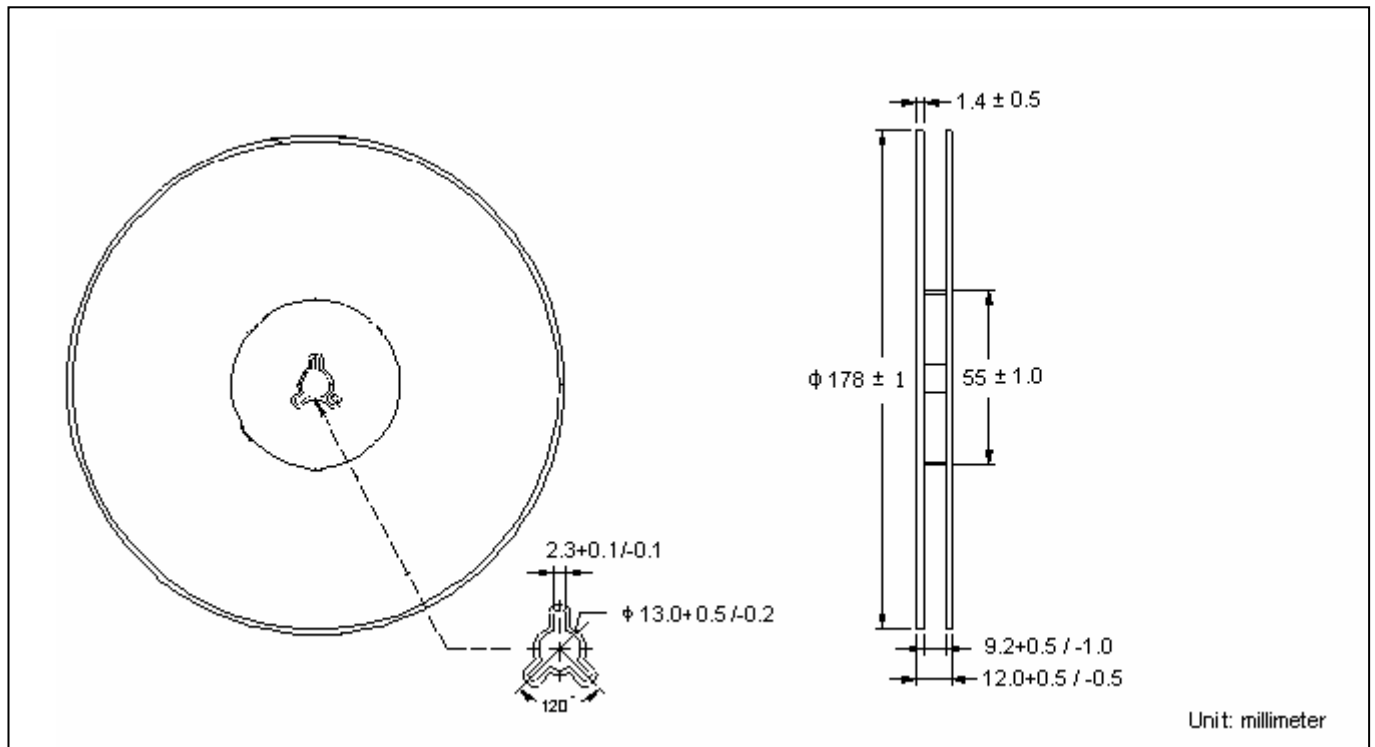
Device	Package	Shipping
RB0540N3	SOT-23 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel



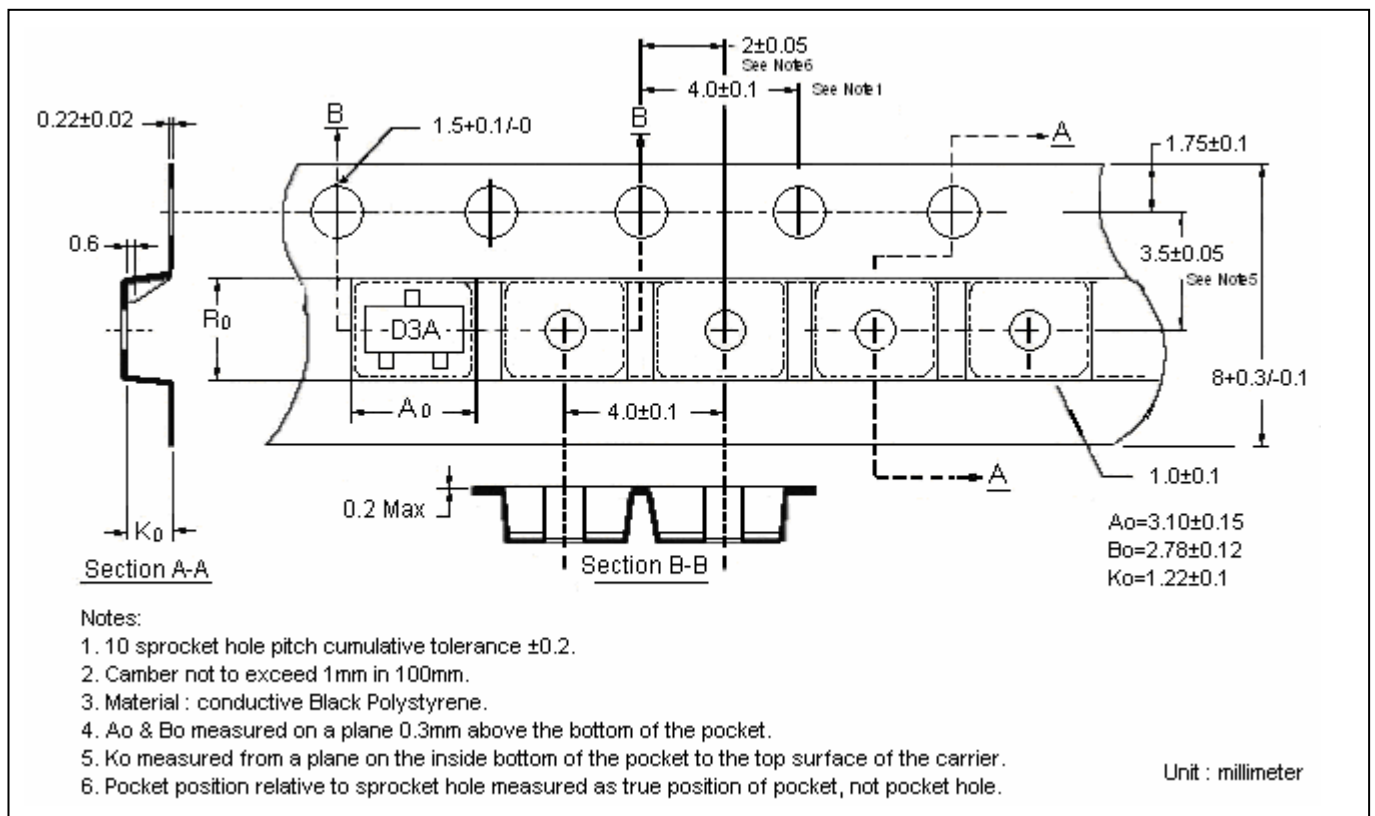
Characteristic Curves



Reel Dimension



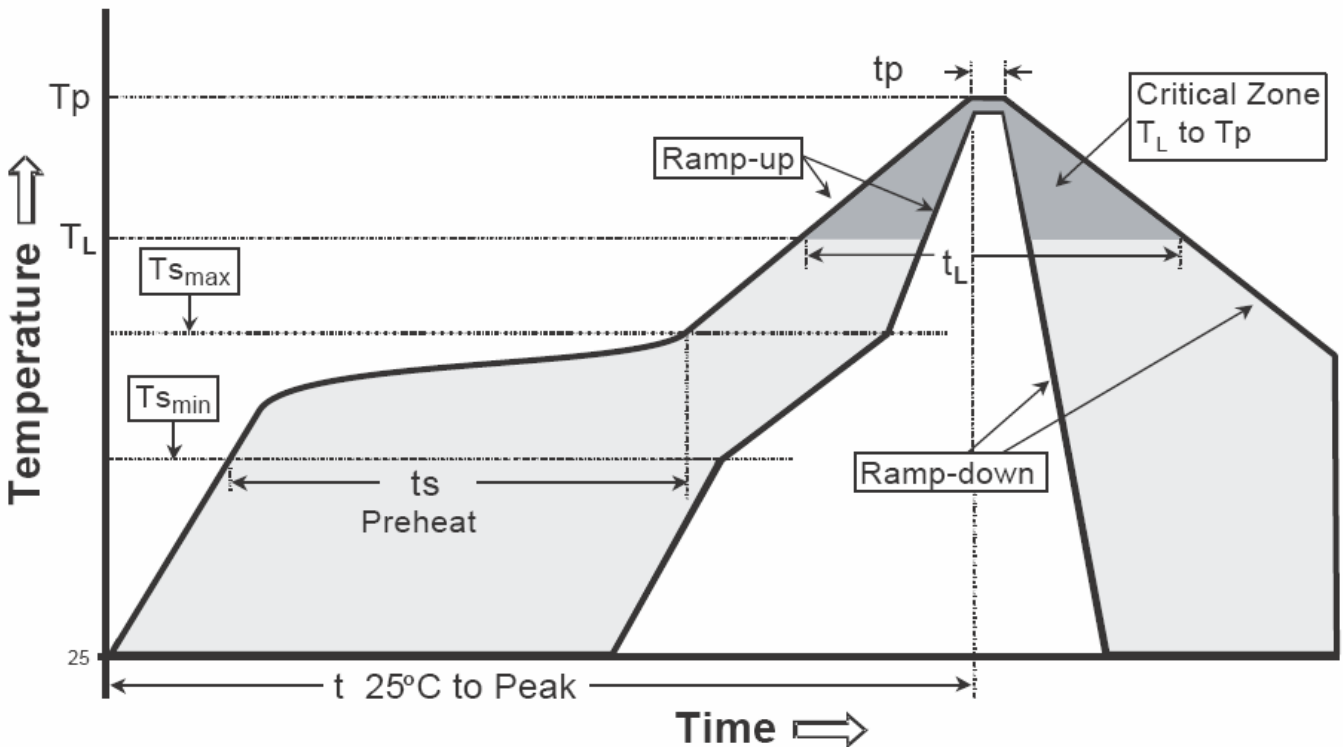
Carrier Tape Dimension



Recommended wave soldering condition

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

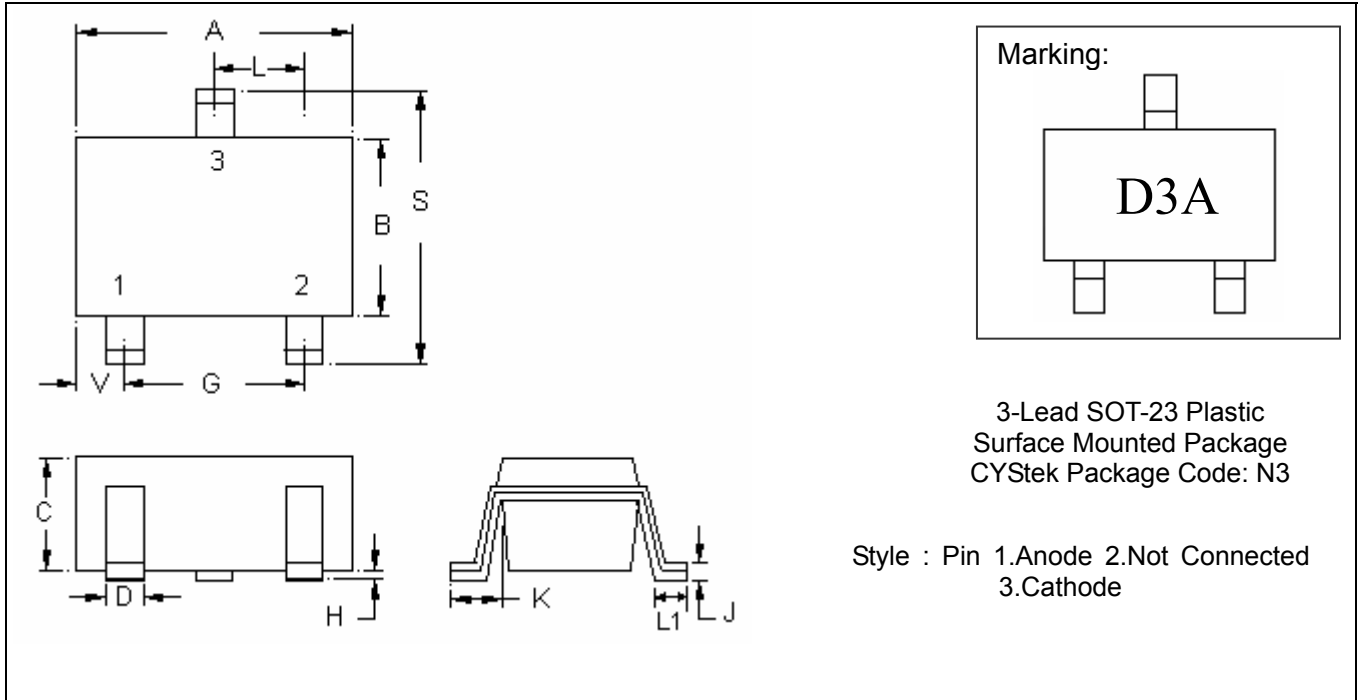
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(T _{s min})	100°C	150°C
-Temperature Max(T _{s max})	150°C	200°C
-Time(t _{s min} to t _{s max})	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (T _L)	183°C	217°C
- Time (t _L)	60-150 seconds	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.

SOT-23 Dimension



DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0032	0.0079	0.08	0.20
B	0.0472	0.0669	1.20	1.70	K	0.0118	0.0266	0.30	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1161	2.10	2.95
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0000	0.0040	0.00	0.10	L1	0.0118	0.0197	0.30	0.50

Notes : 1.Controlling dimension : millimeters.
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
 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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