

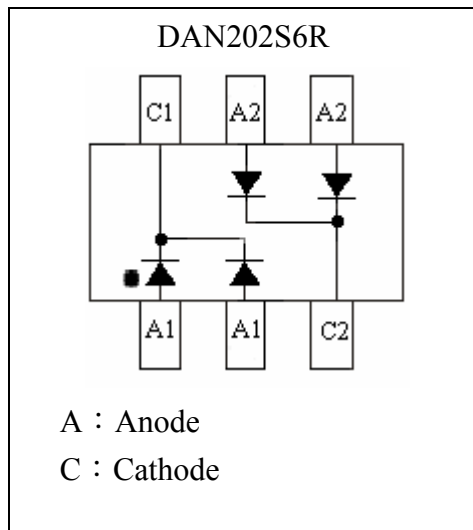
Switching Diode

DAN202S6R

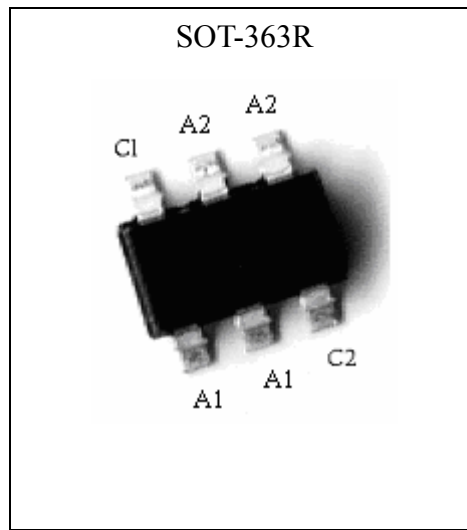
Features

- Fast switching speed.
- Ultra small surface mount package
- High conductance
- Pb-free package

Equivalent Circuit



Outline



Applications

- For general purpose switching applications.

Ordering Information

Device	Package	Shipping	Marking
DAN202S6R	SOT-363 (Pb-free)	3000 pcs / Tape & Reel	KJA



Absolute Maximum Ratings @TA=25°C

Parameters	Symbol	Min	Max	Unit
Repetitive peak reverse voltage	V_{RRM}	-	110	V
Continuous reverse voltage	V_R	-	100	V
Average Rectified Forward Current (single)	I_O	-	150	mA
Repetitive peak forward current	I_{FM}		300	mA
Non-repetitive peak forward current @square wave, $T_j=125^\circ\text{C}$ prior to surge	I_{FSM}	$t=1\mu\text{s}$	4	A
$t=1\text{ms}$		1	A	
$t=1\text{s}$		0.5	A	
Total power dissipation(Note 1)	P_{tot}		200	mW
Operating Junction Temperature Range	T_j	-55	+150	°C
Storage Temperature Range	T_{stg}	-65	+150	°C

Note 1: Device mounted on an FR-4 PCB.

Electrical Characteristics @ Tj=25°C unless otherwise specified

Parameters	Symbol	Conditions	Min	Typ.	Max	Unit
Reverse Breakdown Voltage	$V_{R(BR)}$	$I_R=100\mu\text{A}$				
Forward voltage	V_F	$I_F=1\text{mA}$			715	mV
		$I_F=10\text{mA}$			855	mV
		$I_F=50\text{mA}$	-	-	1	V
		$I_F=150\text{mA}$			1.25	V
Reverse current	I_R	$V_R=25\text{V}$	-	-	30	nA
		$V_R=100\text{V}$			2.5	μA
Diode capacitance	C_d	$V_R=0\text{V}, f=1\text{MHz}$	-	-	2	pF
Reverse recovery time	t_{rr}	when switched from $I_F=10\text{mA}$ to $I_R=10\text{mA}, R_L=100\Omega$, measured at $I_R=1\text{mA}$	-	-	4	ns

Thermal Characteristics

Symbol	Parameter	Conditions	Value	Unit
$R_{th, j-a}$	thermal resistance from junction to ambient	Note 1	625	°C/W

Note 1: Device mounted on an FR-4 PCB.

Typical Characteristics

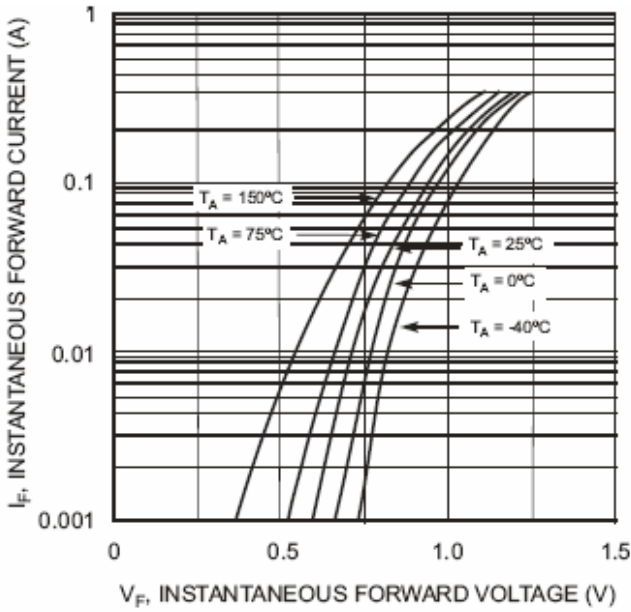


Fig. 1 Forward Characteristics

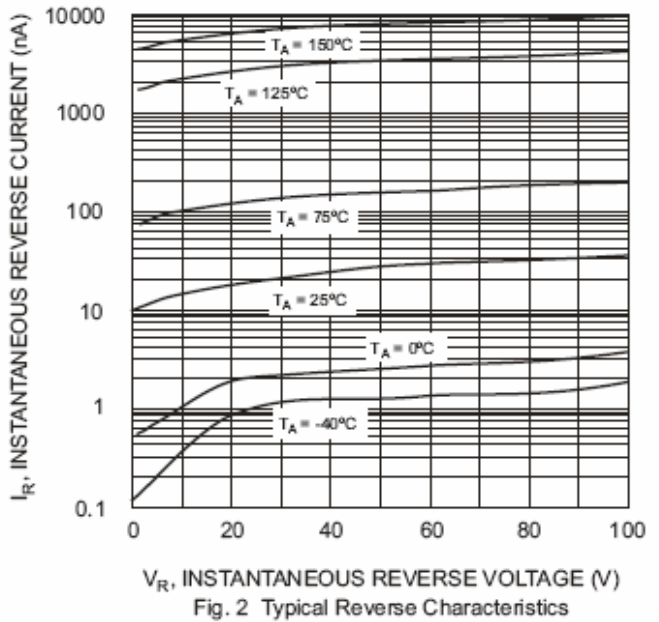


Fig. 2 Typical Reverse Characteristics

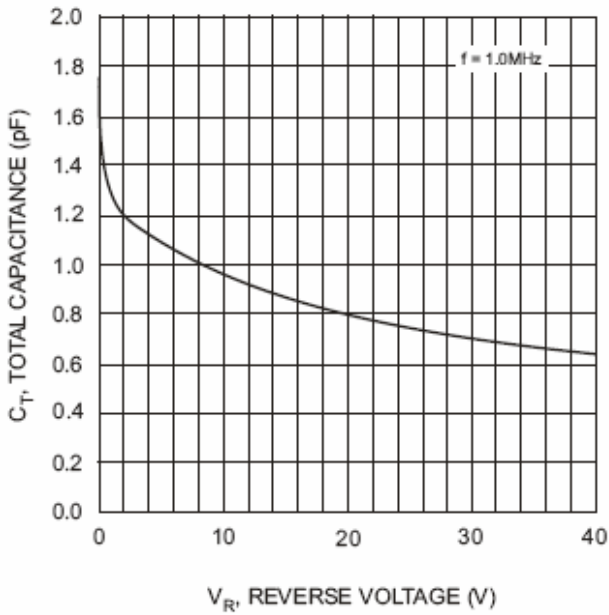


Fig. 3 Typical Capacitance vs. Reverse Voltage

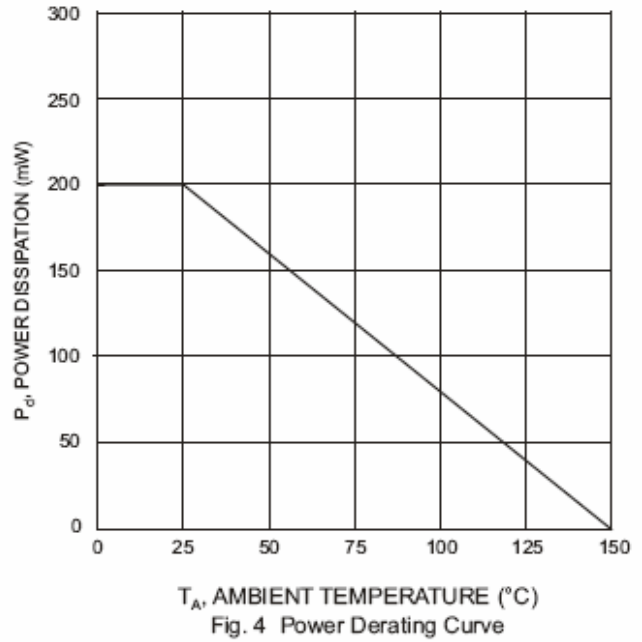
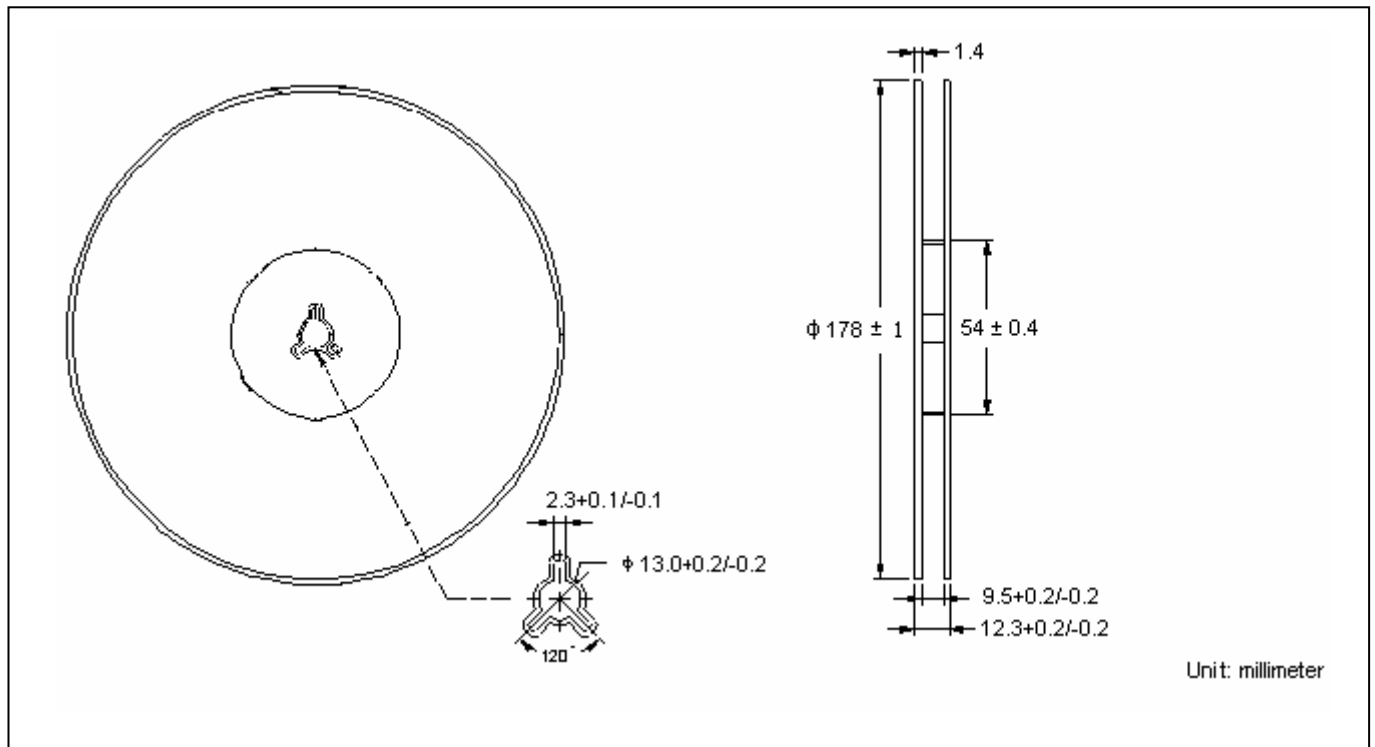
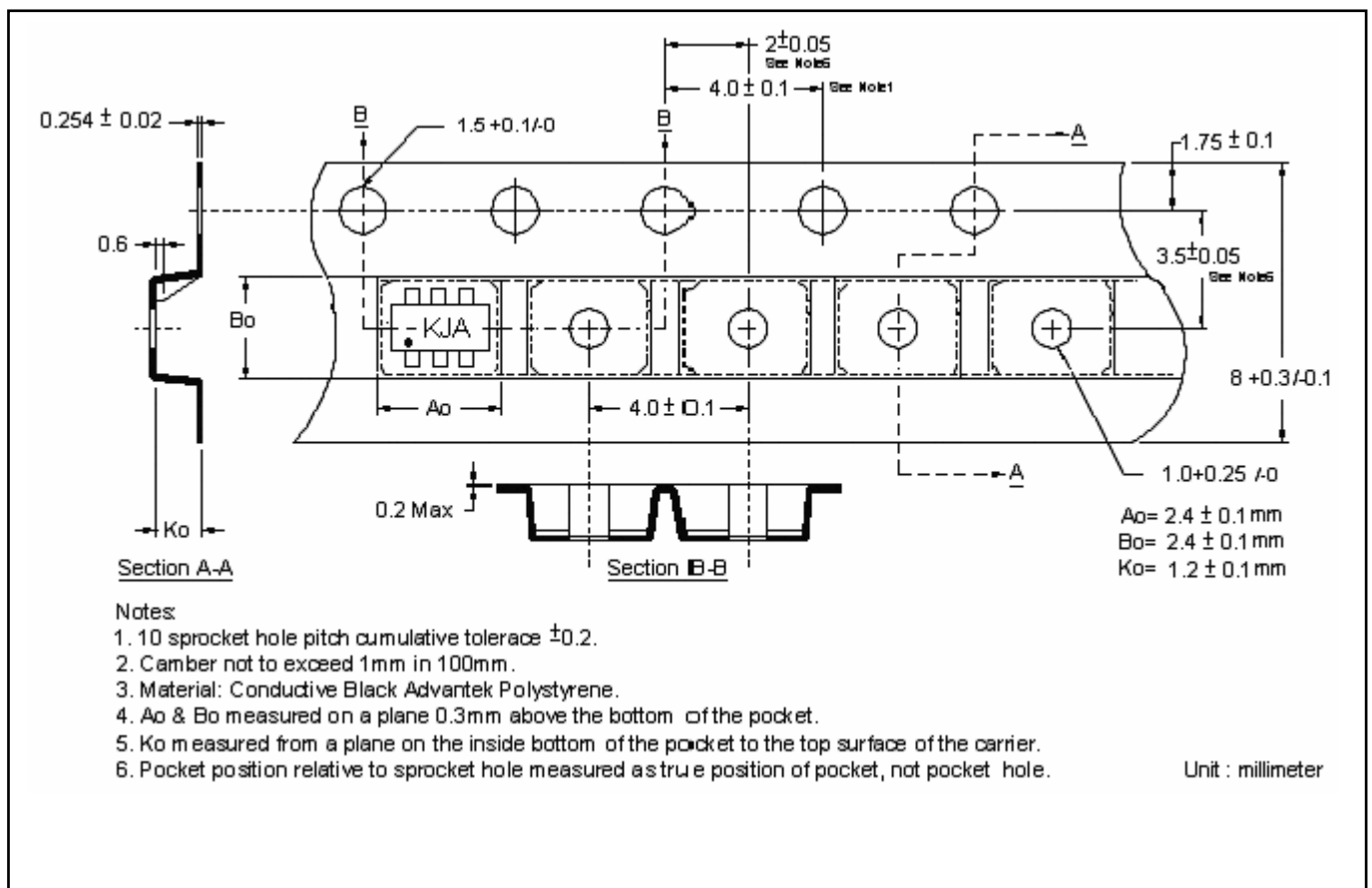


Fig. 4 Power Derating Curve

Reel Dimension



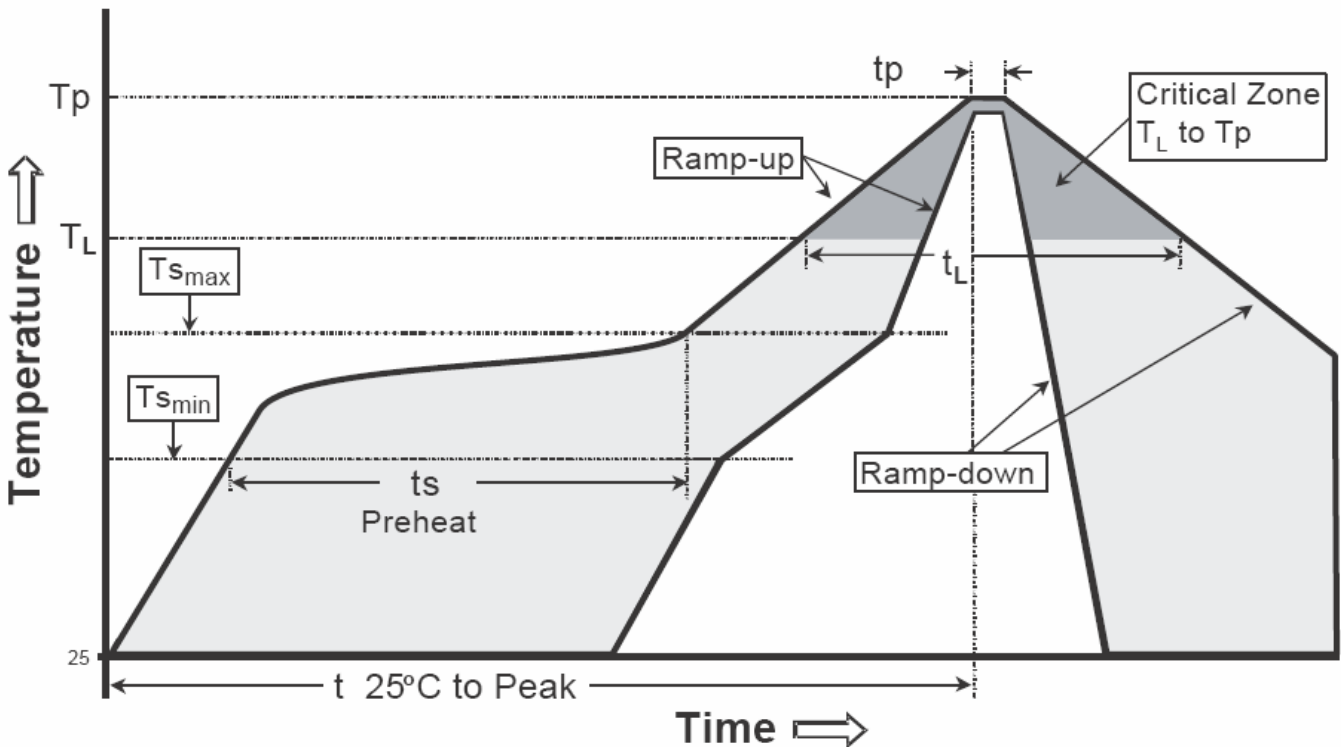
Carrier Tape Dimension



Recommended wave soldering condition

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

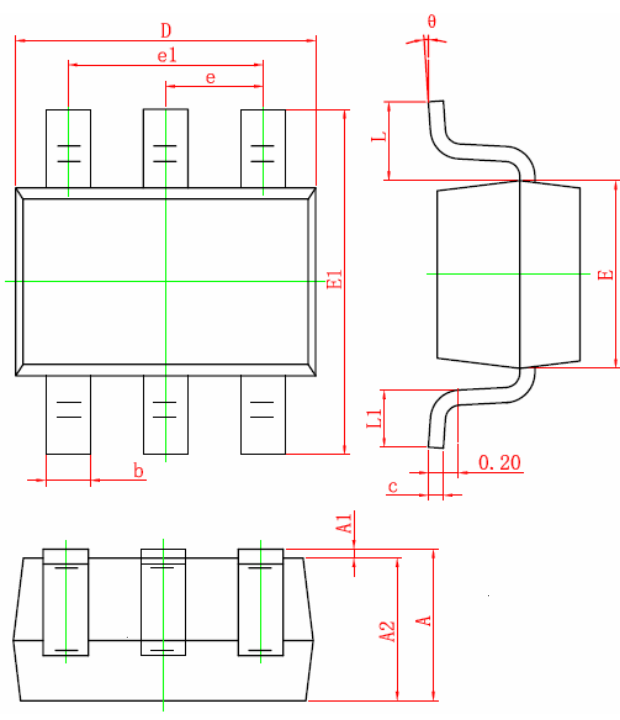
Recommended temperature profile for IR reflow



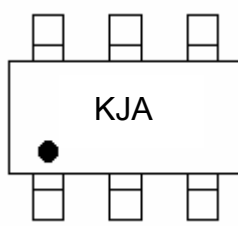
Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmmax to Tp)	3°C/second max.	3°C/second max.
Preheat		
-Temperature Min(Ts min)	100°C	150°C
-Temperature Max(Ts max)	150°C	200°C
-Time(ts min to ts max)	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature (Tl)	183°C	217°C
- Time (tl)	60-150 seconds	60-150 seconds
Peak Temperature(Tp)	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-363R Dimension



Marking:



6-Lead SOT-363R Plastic Surface Mounted Package
 CYStek Package Code: S6R

Style:
 Pin 1. Anode1 (A1)
 Pin 2. Anode1 (A1)
 Pin 3. Cathode2 (C2)
 Pin 4. Anode2 (A2)
 Pin 5. Anode2 (A2)
 Pin 6. Cathode1 (C1)

*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.035	0.043	0.900	1.100	E1	2.150	2.450	0.085	0.096
A1	0.000	0.004	0.000	0.100	e	0.026*		0.650*	
A2	0.035	0.049	0.900	1.000	e1	0.047	0.055	1.200	1.400
b	0.006	0.014	0.150	0.350	L	0.021	REF	0.525	REF
c	0.080	0.150	0.003	0.006	L1	0.010	0.018	0.260	0.460
D	2.000	2.200	0.079	0.087	θ	0°	8°	0°	8°
E	1.150	1.350	0.045	0.053					

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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