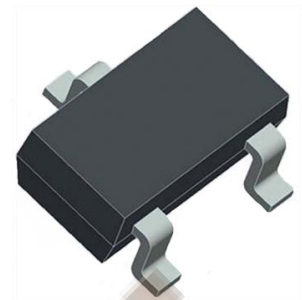
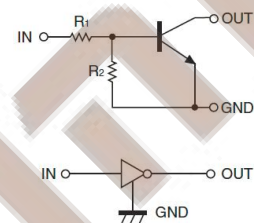


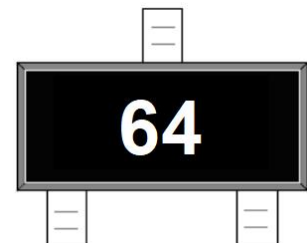
Features

- Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors(see equivalent circuit)
- The bias resistors consist of thin-film resistors with complete isolation to allow positive biasing of the input.They also have the advantage of almost completely eliminating parasitic effects
- Only the on/off conditions need to be set for operation,marking Device design easy
- Moisture Sensitivity Level 3



Mechanical Data

- SOT-523 Package
- Epoxy UL:94V-0
- Mounting Position:Any
- R1=10KΩ, R2=47KΩ



Package Marking and Ordering Information

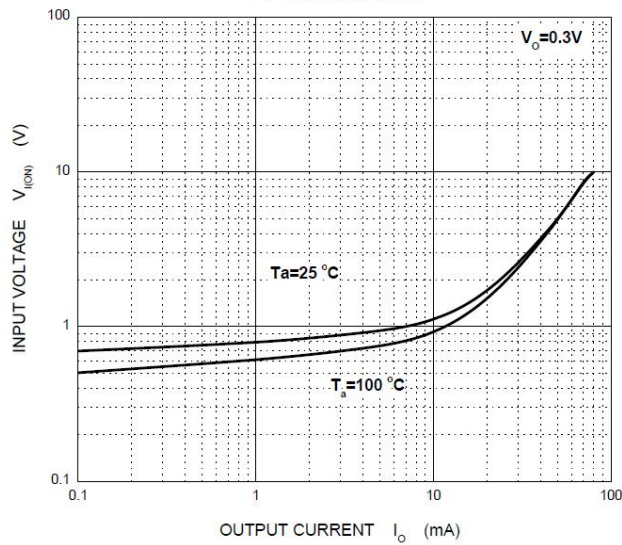
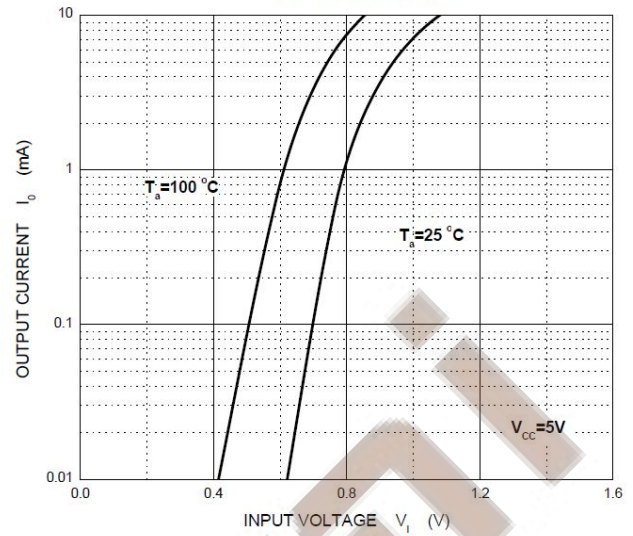
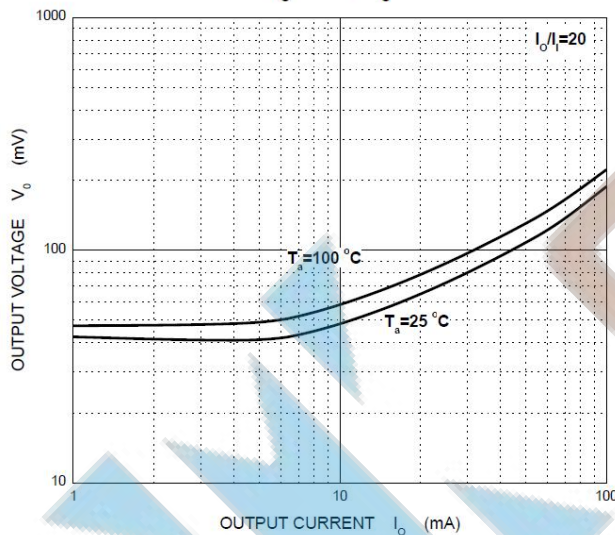
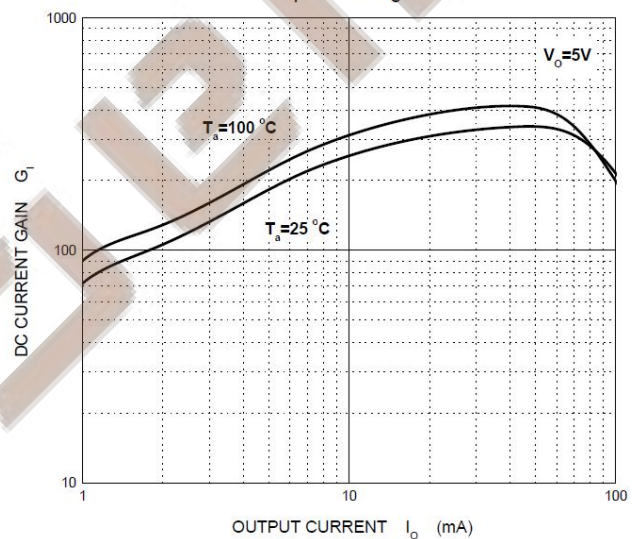
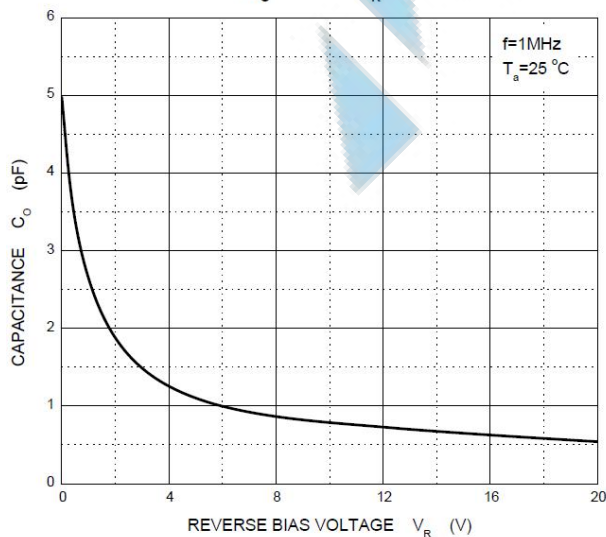
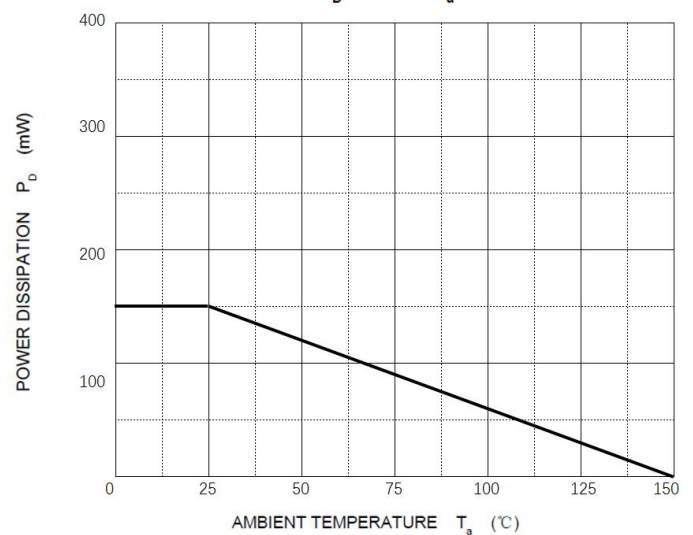
Product ID	Package	Marking	Qty(PCS)
DTC114YE	SOT-523	64	3000

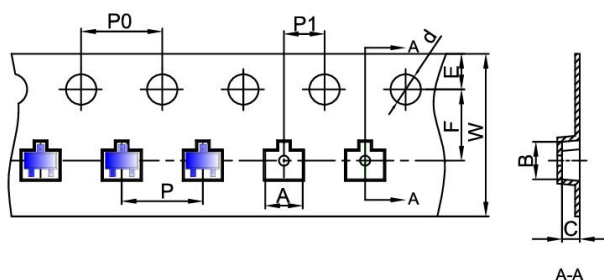
Absolute Maximum Ratings (Ta=25°C unless otherwise noted)

Parameters	Symbols	Limits	Units
Supply Voltage	VCC	50	V
Input Voltage	VIN	-6~+40	V
Output Current	IO	70	mA
Peak Collector Current	ICM	100	mA
Power Dissipation	PC	150	mW
Junction Temperature	Tj	-55~+150	°C
Storage Temperature	Tstg	-55~+150	°C

Electrical Characteristics(Ta=25°C unless otherwise noted)

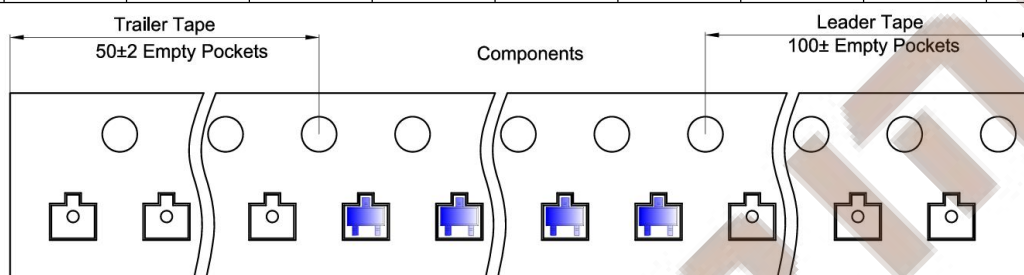
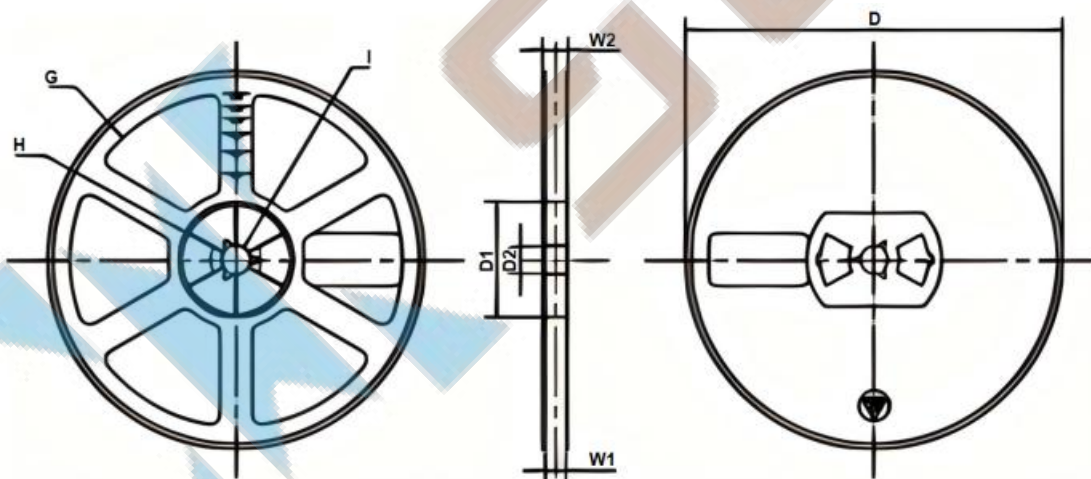
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Input on voltage	VI(ON)	VO=0.3V, IO=1mA			1.4	V
Input off voltage	VI(OFF)	VCC=5V, IO=0.1mA	0.3			V
Output voltage	VO(on)	IO/II=5mA/0.25mA			0.3	V
Input current	II	VI=5V			880	uA
Output current	IO(off)	VCC=50V, VI=0			0.5	uA
DC current gain	GI	VO=5V, IO=5mA	68			
Input resistor	R1	-	7	10	13	kΩ
Resistor ratio	R2/R1	-	3.7	4.7	5.7	
Transition frequency	fT	VO= 10V, IO=5mA, f=100MHz		250		MHz

Typical characteristics
ON Characteristics

OFF Characteristics

 V_o — I_o

 G_i — I_o

 C_o — V_R

 P_D — T_a


Package Information
Carrier Dimension(mm)


Dimensions are in millimeter

Pkg Type	A	B	C	d	E	F	P0	P	P1	W
SOT-523	1.85	1.85	0.875	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00


Reel Dimension(mm)


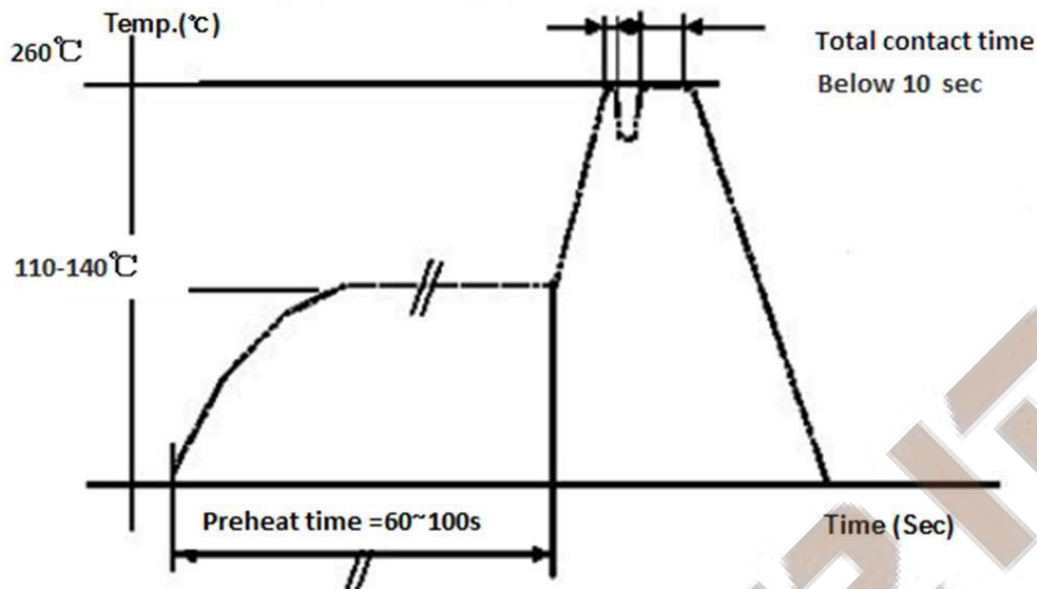
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	±2	±1	±1	±1	±1	±1	±1	±1

Package Specifications

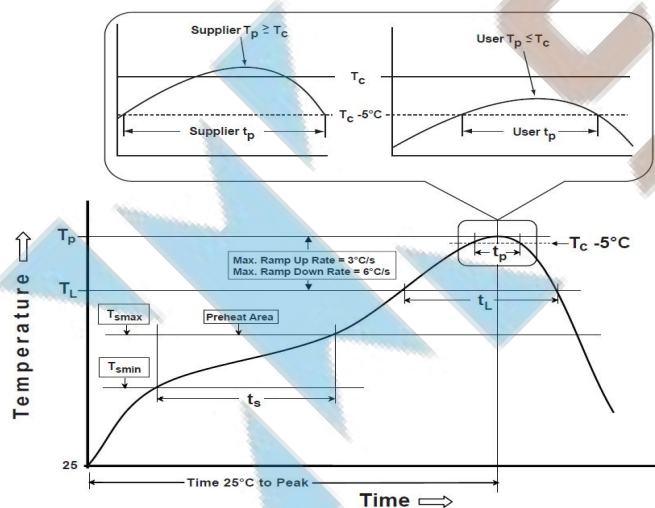
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOT523	7'	178	3	210*208*203	45	440*400*230	180

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020

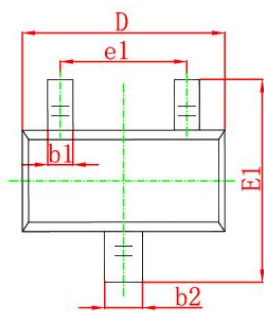
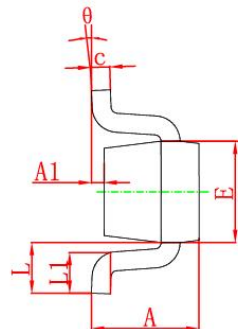
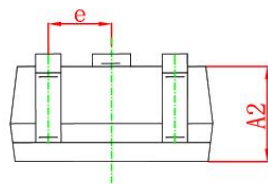


Preheat/Soak Temperature Min (T _{smin}) Temperature Max (T _{smax}) Time (ts) from (T _{smin} to T _{smax})	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217°C
Ramp-up Rate to 217°C(Melting Point of Solder)	3°C/sec
Time at Temp.>217°C (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5°C
Time within 5°Cbelow Peak Temp.	20~40 Sec
Cooling Rate	6°C/sec (max)
Time from 25°C to Peak Temp.	8min (max)

c) Manual Soldering

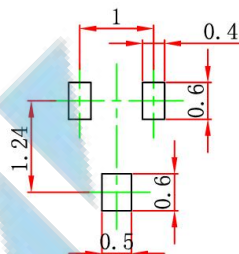
When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

Package Mechanical Data



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

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