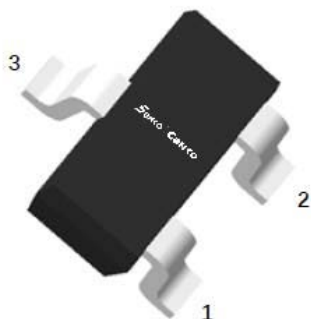
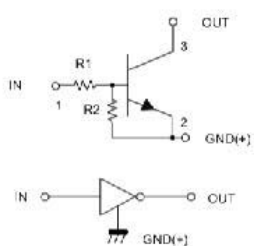


NPN Digital Transistors (Built-in Resistors)



1: IN
2: GND
3: OUT



Features

- Moisture sensitivity level 1
- Halogen free and
- Surface mount package ideally suited for automatic insertion

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package:** SOT-523
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings (Ta=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				45
Supply voltage	V_{CC}	V		50
Input voltage	V_{IN}	V		-10 to +40
Output current	I_O	mA		100
Power dissipation	P_D	mW		150
Junction temperature	T_J	°C		-55 to +150
Storage temperature	T_{STG}	°C		-55 to +150

DTC124XE

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Input voltage	V _{I(off)}	V	V _{CC} =5V, I _O =100uA	0.4		
	V _{I(on)}	V	V _O =0.3V, I _O =2mA			2.5
Output voltage	V _{O(on)}	V	I _O /I _I =10mA/0.5 mA			0.3
Input current	I _I	uA	V _I =5V			120
Output current	I _{O(off)}	uA	V _{CC} =50V, V _I =0			0.1
DC current gain	G _I		V _O =5V, I _O =5mA	68		
Input resistance	R ₁	kΩ		15.4	22	28.6
Resistance ratio	R ₂ /R ₁			1.7	2.1	2.6
Transition frequency	f _T	MHz	V _O =10V, I _O =5mA, f=100MHz		250	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	833
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	666

Note:

(1) Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 25.4mm*25.4mm copper pad areas

■ Characteristics

Fig 1: DC Current Gain Characteristics

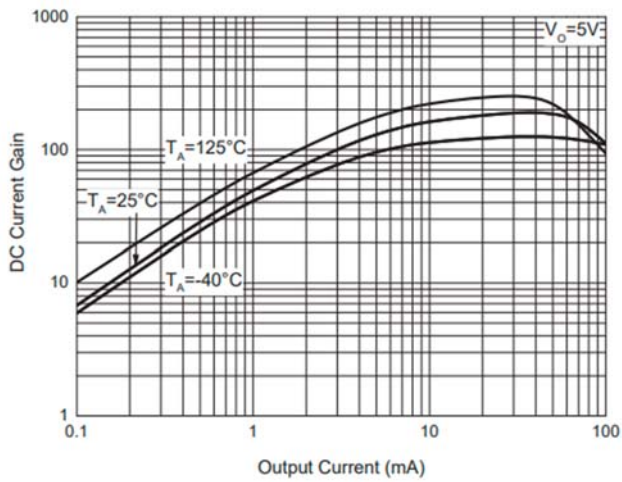


Fig 2: Input Voltage (On) Characteristics

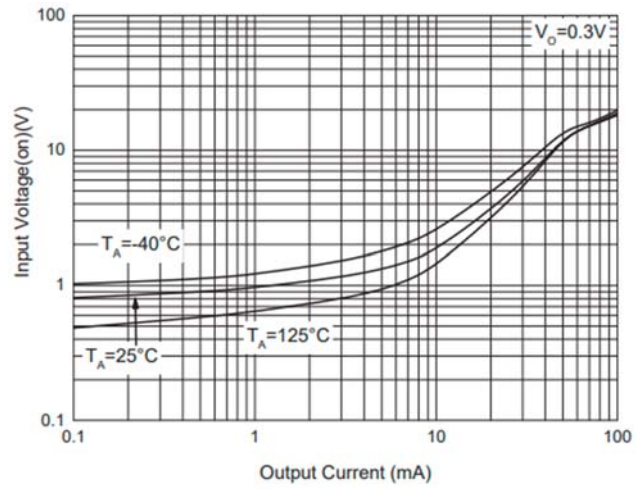


Fig 3: Input Voltage (Off) Characteristic

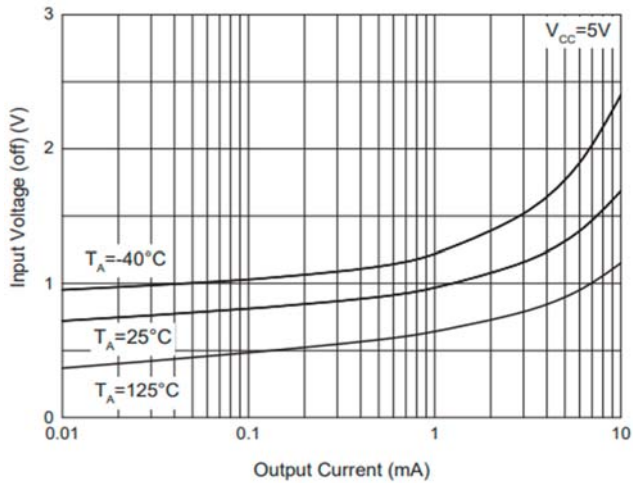


Fig 4: Output Voltage Characteristics

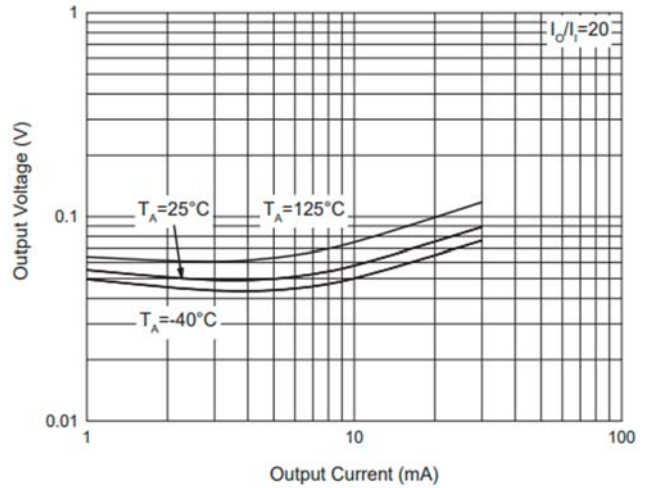
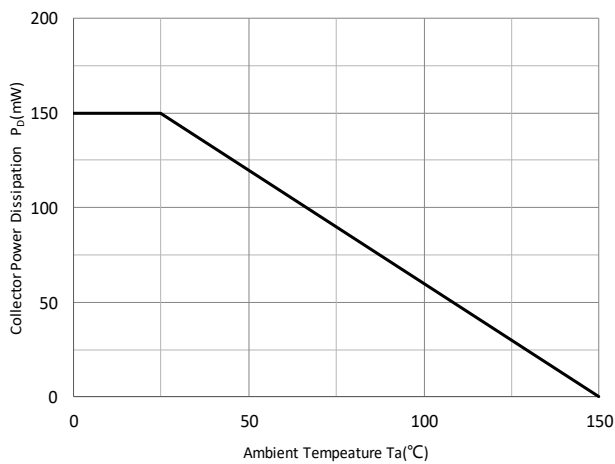


Fig 5: P_D-T_a Curve

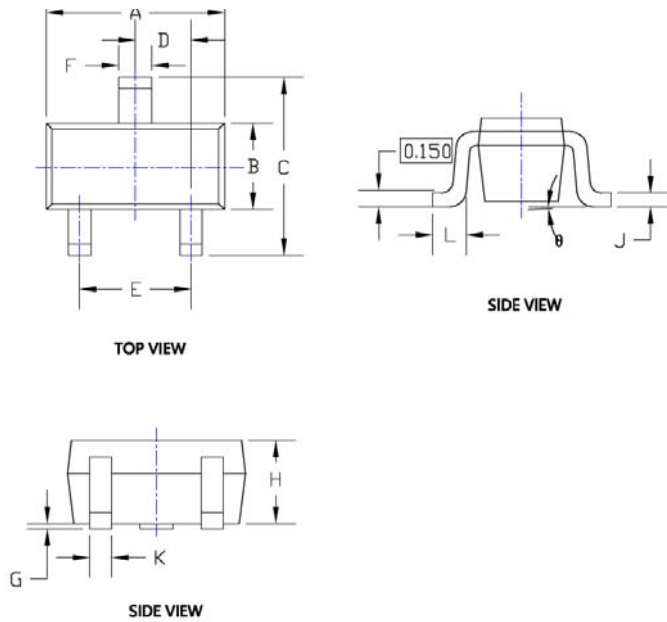


DTC124XE

■ Ordering Information

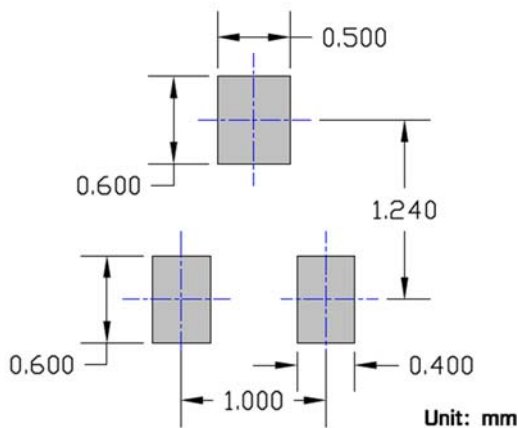
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTC124XE	F2	Approximate 0.0027	3000	30000	120000	7" reel

■ Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.059	0.067	1.500	1.700
B	0.030	0.033	0.750	0.850
C	0.057	0.069	1.450	1.750
D	0.020TYP		0.500TYP	
E	0.035	0.043	0.900	1.100
F	0.010	0.018	0.250	0.450
G	0.000	0.004	0.000	0.100
H	0.024	0.031	0.600	0.800
J	0.004	0.008	0.100	0.200
K	0.006	0.014	0.150	0.350
L	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

■ Suggested Pad Layout



DTC124XE

Disclaimer

The information presented in this document is for reference only. Shanghai Sunco Electronics Co., Ltd reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function, or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Russiansunco or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.russiansunco.com](http://www.russiansunco.com) , or consult your nearest Russiansunco's sales office for further assistance.