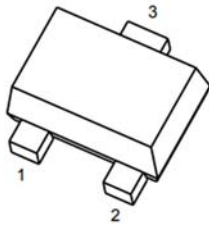
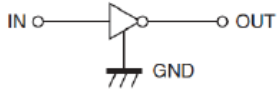
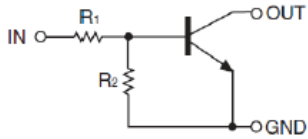


NPN Digital Transistors (Built-in Resistors)



1. IN
2. GND
3. OUT

SOT-723

Features

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

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package:** SOT-723
- **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				E21
Supply voltage	V_{CC}	V		50
Input voltage	V_{IN}	V		-5 to +10
Output current	I_O	mA		100
Power dissipation	P_D	mW		100
Junction temperature	T_J	°C		-55 to +150
Storage temperature	T_{STG}	°C		-55 to +150



■ 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 _C =100uA	0.3		
	V _{I(on)}	V	V _O =0.3V, I _C =10mA			3
Output voltage	V _{O(on)}	V	I _O / I _I = 10mA/0.5 mA			0.3
Output current	I _{O(off)}	uA	V _{CC} =50V, V _I =0			0.5
DC current gain	G _I		V _O =5V, I _O =5mA	33		
Input resistance	R ₁	kΩ		0.7	1.0	1.3
Resistance ratio	R ₂ /R ₁			8	10	12
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	1250
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	1000

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

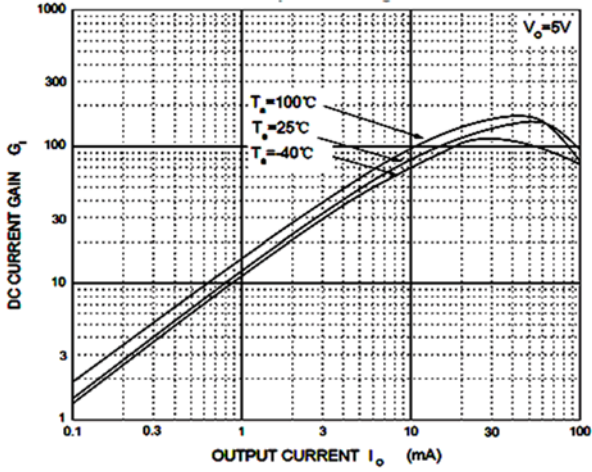


Fig 2: Input Voltage (On) Characteristics

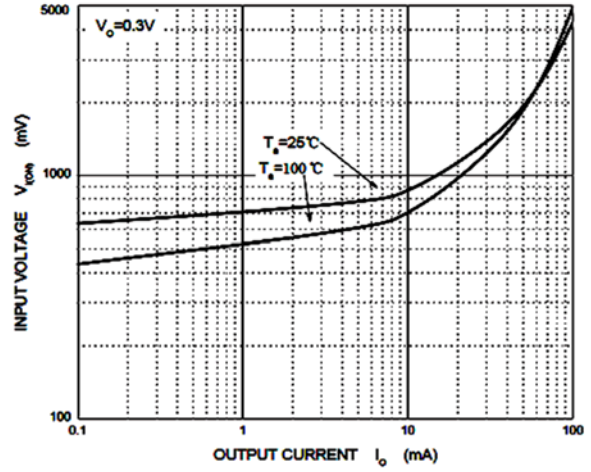


Fig 3: Input Voltage (Off) Characteristic

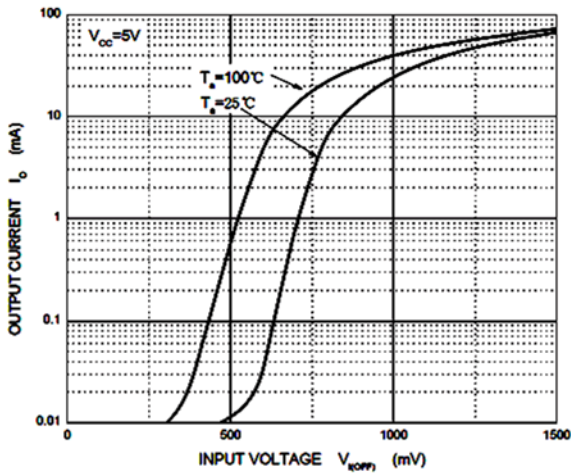


Fig 4: Output Voltage Characteristics

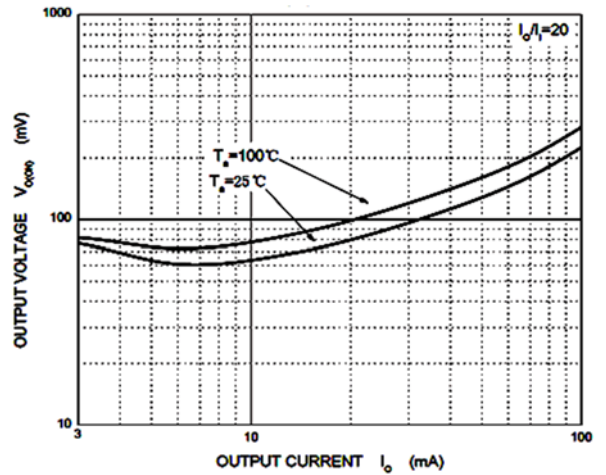
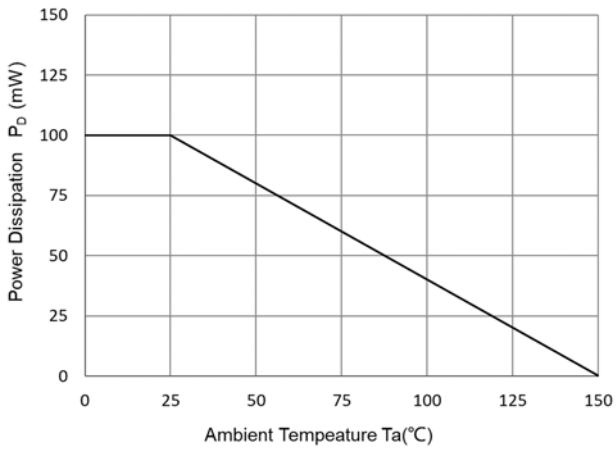


Fig 6: P_D-T_a Curve





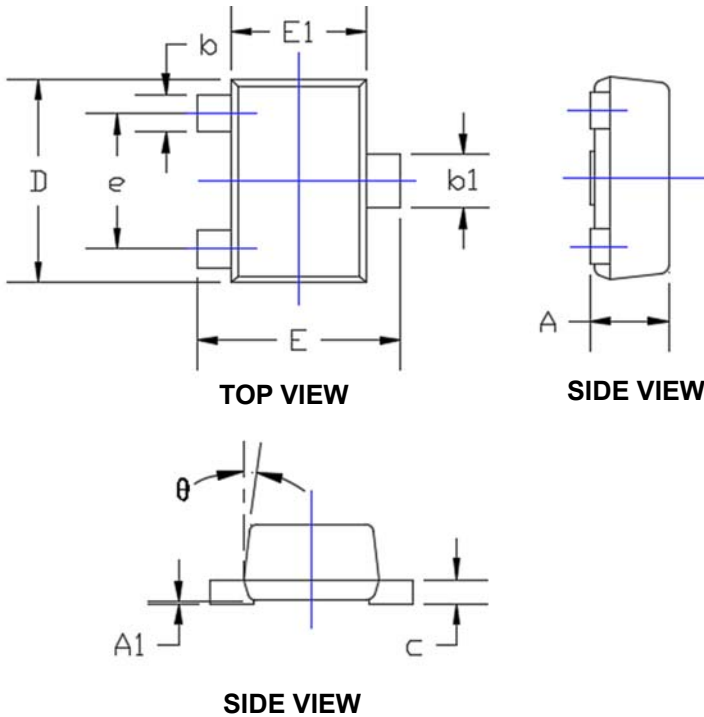
DTC113ZM

RoHS
COMPLIANT

Ordering Information

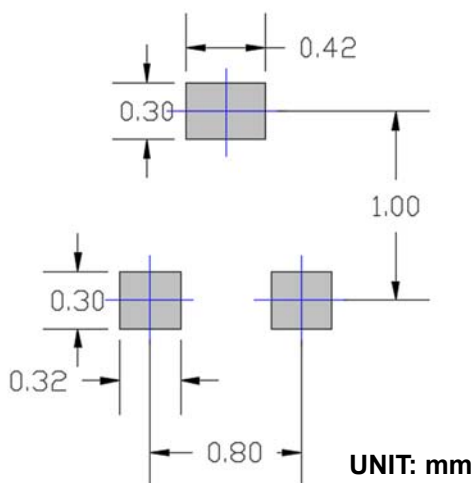
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
DTC113ZM	F2	Approximate 0.0013	8000	80000	320000	7" reel

Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.017	0.022	0.430	0.550
A1	0.000	0.002	0.000	0.050
b	0.007	0.011	0.170	0.270
b1	0.011	0.015	0.270	0.370
c	0.003	0.008	0.080	0.200
D	0.045	0.049	1.150	1.250
E	0.045	0.049	1.150	1.250
E1	0.030	0.033	0.750	0.850
e	0.031TYP.		0.800TYP.	
θ	7°REF.		7°REF.	

Suggested Pad Layout





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