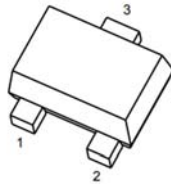
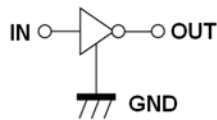
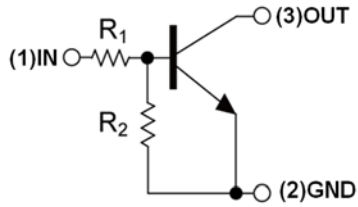


NPN Digital Transistors (Built-in Resistors)



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 (T_a=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



DTC113ZM

RoHS
COMPLIANT

■ 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 =100μA	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)}	μA	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: Thermal resistance from junction to ambient and from junction to case mounted on P.C.B. with 25.4mm*25.4mm copper pad areas

■ 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



■ Characteristics

Fig 1: DC Current Gain Characteristics

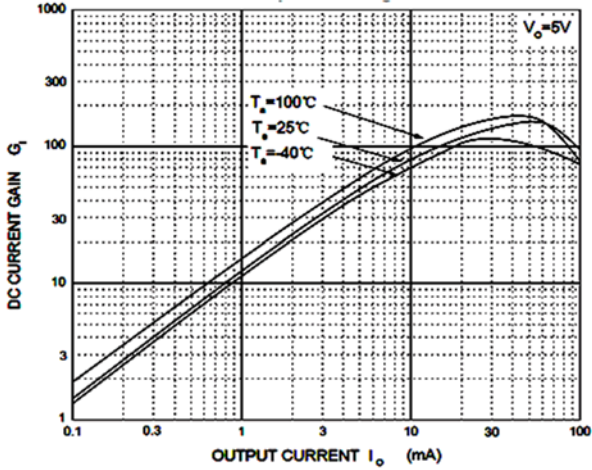


Fig 2: Input Voltage (On) Characteristics

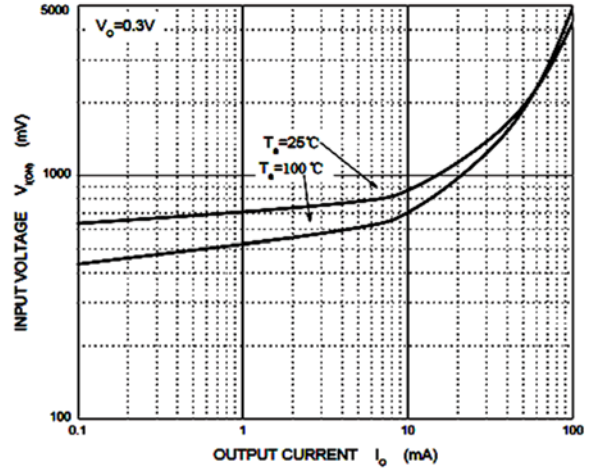


Fig 3: Input Voltage (Off) Characteristic

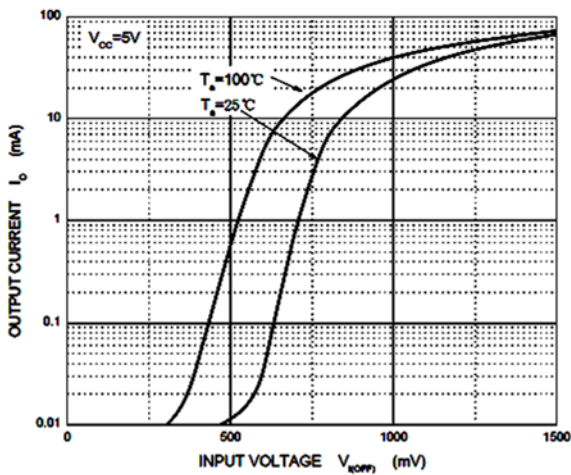


Fig 4: Output Voltage Characteristics

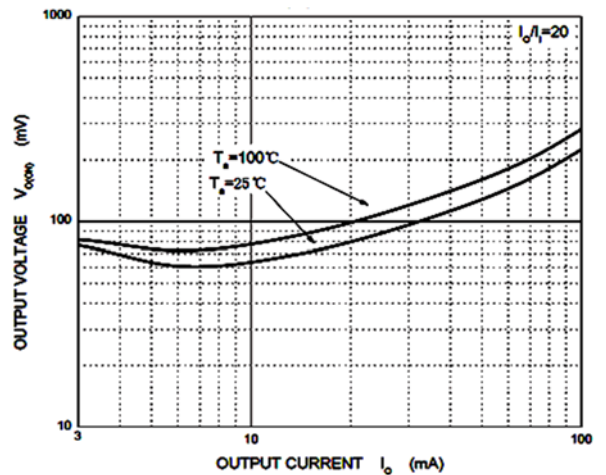
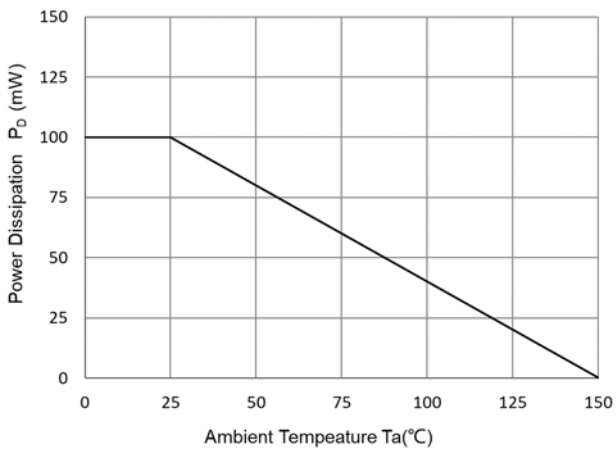
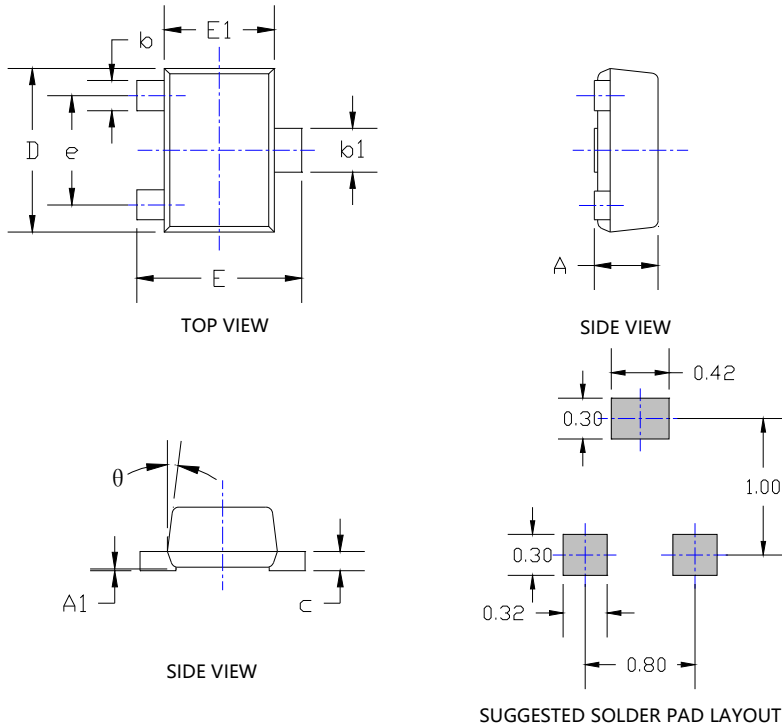


Fig 6: P_D-Ta Curve





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	0.031 TYP.		0.800 TYP.	
θ	7° REF.		7° REF.	

NOTE:
 1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.
 2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.
 3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

Note:

- All dimensions are in millimeters (mm) unless otherwise specified.
[所有尺寸均以毫米为单位, 除非另有说明]
- General tolerances: $\pm 0.10\text{mm}$ unless otherwise specified.
[通用公差为 $\pm 0.10\text{mm}$, 除非另有说明]
- Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
- All dimensions shown are exclusive of burrs and gate residues. Burrs and gate vestiges shall not exceed 0.15 mm in maximum.
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
- Dimension b does not include dambar protrusion of max 0.100 mm per side.
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
- Dimensions D and E1 are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.
[D和E1是塑封体的外部极限尺寸, 不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺, 但是包含了包封错位的最大尺寸]
- Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.
[成型的管脚应为同一平面, 共面性最大为0.1mm]
- ★ It is the key size.
[★ 标记为关键尺寸]



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