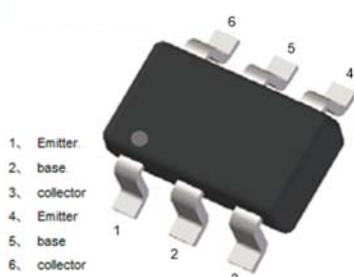
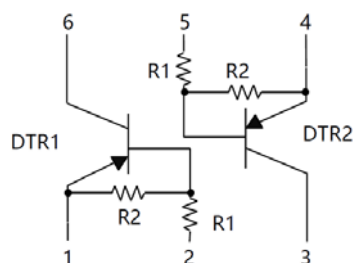


Dual PNP+PNP Digital Transistors (Built-in Resistors)



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-363S
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code				B20
Collector-base voltage	V_{CC}	V		-50
Collector-emitter voltage	V_{IN}	V		-12 to +10
Collector current	I_O	mA		-100
Power dissipation	P_D	mW		150
Operation junction temperature	T_J	$^{\circ}\text{C}$		-55 to +150
Storage temperature	T_{STG}	$^{\circ}\text{C}$		-55 to +150



UMB20NS

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	-0.5		
	V _{I(on)}	V	V _O =-0.3V, I _c =-10mA			-3.0
Output voltage	V _{O(on)}	V	I _o / I _i = -10mA-5mA			-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 =-20mA	20		
Input resistance	R ₁	kΩ		1.5	2.2	2.9
Resistance ratio	R ₂ /R ₁			0.8	1	1.2
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	834
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	667

Note:

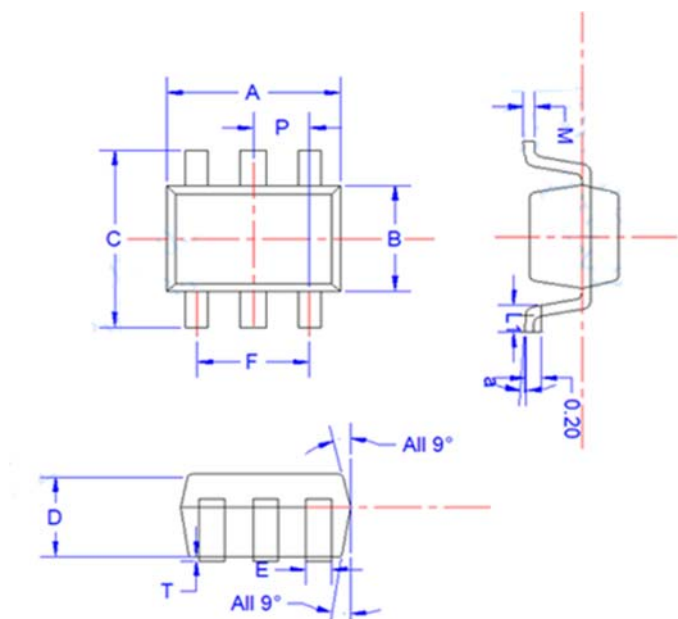
(1) Device mounted on PCB, single-sided copper, with standard footprint

■ Ordering Information

Part Number	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
UMB20NS	F2	Approximate 0.009	3000	30000	120000	7" reel
UMB20NS	F3	Approximate 0.009	10000	/	210000	7" reel

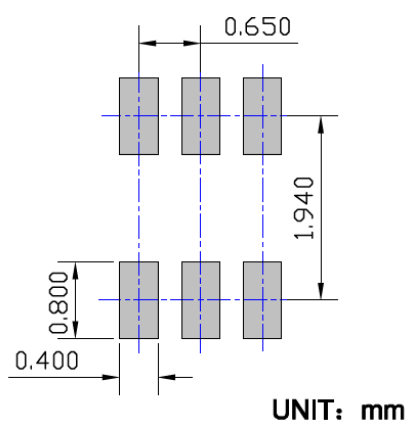


■ Outline Dimensions



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
E	0.15	0.25	0.35
B	1.15	1.25	1.35
C	2.00	2.10	2.20
P	0.650BSC		
A	1.80	2.00	2.20
T	0.00	0.05	0.100
D	0.90	0.95	1.00
L1	0.20	0.30	0.40
a	4°±4°		
M	0.10	0.15	0.25

■ Suggested Pad Layout





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