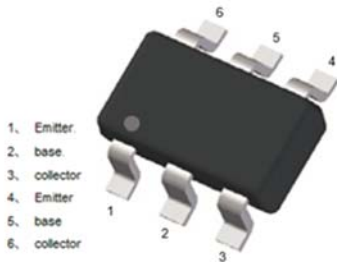
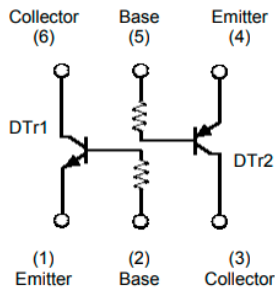


Dual NPN+PNP Digital Transistors (Built-in Resistors)



Features

- Moisture sensitivity level 1
- General switching and amplification
- Surface mount package ideally suited for automatic insertion

Mechanical data

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

Application

- Signal amplification
- Switching circuit
- Marking code : D30

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

DTr1:NPN

Item	Symbol	Unit	Conditions	Value
Collector-base voltage	V_{CBO}	V		50
Collector-emitter voltage	V_{CEO}	V		50
Emitter-base voltage	V_{EBO}	V		5
Collector current	I_C	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

DTr1:PNP

Item	Symbol	Unit	Conditions	Value
Collector-base voltage	V_{CBO}	V		-50
Collector-emitter voltage	V_{CEO}	V		-50
Emitter-base voltage	V_{EBO}	V		-5
Collector current	I_C	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



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

DTr1:NPN

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base voltage	V _{CBO}	V	I _C =1mA	50		
Collector-emitter voltage	V _{CEO}	V	I _C =1mA	50		
Emitter-base voltage	V _{EBO}	V	I _E =50μA	5		
Collector-base cut-off current	I _{CBO}	μA	V _{CB} =50V			0.5
Emitter-base cut-off current	I _{EBO}	μA	V _{EB} =5V			0.5
DC current gain	h _{FE}		V _{CE} =5V, I _C =20mA	100		600
Input resistance	R ₁	kΩ		1.54	2.2	2.86
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =10mA, I _B =0.5mA			0.3
Transition frequency	f _T	MHz	V _{CE} =10V, I _E =5mA, f=100MHz		250	

DTr2:PNP

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base voltage	V _{CBO}	V	I _C =-50μA	-50		
Collector-emitter voltage	V _{CEO}	V	I _C =-1mA	-50		
Emitter-base voltage	V _{EBO}	V	I _E =-50μA	-5		
Collector-base cut-off current	I _{CBO}	μA	V _{CB} =-50V			-0.5
Emitter-base cut-off current	I _{EBO}	μA	V _{EB} =-4V			-0.5
DC current gain	h _{FE}		V _{CE} =-5V, I _C =-1mA	100		600
Input resistance	R ₁	kΩ		1.54	2.2	2.86
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =-5mA, I _B =-0.25mA			-0.3
Transition frequency	f _T	MHz	V _{CE} =-10V, I _E =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

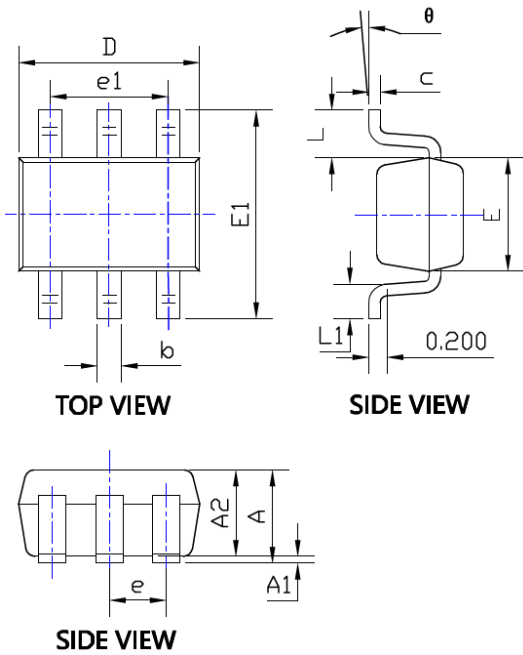
■ Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
UMD30N	F2	Approximate 0.009	3000	30000	120000	7" reel
UMD30N	F3	Approximate 0.009	10000	/	210000	7" reel



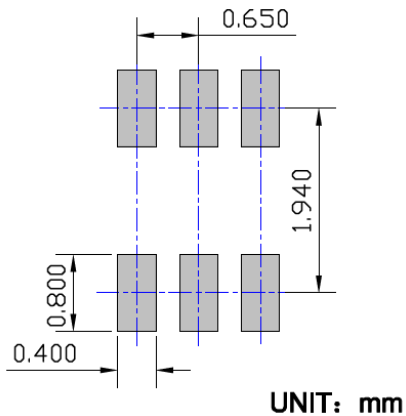
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■ Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.014	0.150	0.350
c	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

■ Suggested Pad Layout





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