



DTCA143EDW

Datasheet

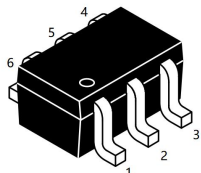
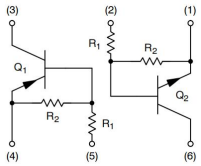
Digital Transistors (Built-in Resistors) SOT-363

Dual Digital Transistors (NPN+PNP)

Features

- DTC143E and DTA143E transistors are built-in a package
- Mounting possible with SOT-363 automatic mounting machines
- Transistor elements are independent, eliminating interference
- Mounting cost and area be cut in half

Schematic & Pin configuration

Simplified outline	Schematic & Pin configuration
	

NPN DTC143E Absolute Maximum Ratings (T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Supply voltage	V _{CC}	50	V
Input voltage	V _{IN}	-10~+30	V
Output current	I _O	100	mA
	I _{CM}	200	
Power Dissipation	P _C	150	mW
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-50 ~ +150	°C

PNP DTA143E Absolute Maximum Ratings (T_A = 25 °C, unless otherwise specified)

Parameter	Symbol	Value	Unit
Supply voltage	V _{CC}	-50	V
Input voltage	V _{IN}	-30~+10	V
Output current	I _O	-100	mA
	I _{CM}	-200	
Power Dissipation	P _C	150	mW
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-50 ~ +150	°C



NPN DTC143E Electrical Characteristics (T_A = 25 °C, unless otherwise specified)

Characteristics	Symbol	Min	Typ	Max	Unit	Conditions
Input voltage	V _{I(off)}	0.5	--	--	V	V _{CC} =5V, I _O =100μA
	V _{I(on)}	--	--	3	V	V _O =0.3V, I _O =20mA
Output voltage	V _{O(on)}	--	--	0.3	V	I _O /I _I =10mA/0.5mA
Input current	I _I	--	--	1.8	mA	V _I =5V
Output current	I _{O(off)}	--	--	0.5	μA	V _{CC} =50V, V _I =0
DC current gain	G _I	20	--	--		V _O =5V, I _O =10mA
Input resistance	R ₁	3.3	4.7	6.1	KΩ	--
Resistance ratio	R ₂ /R ₁	0.8	1.0	1.2	--	--
Transition frequency	f _T	--	250	--	MHz	V _{CE} =10V, I _E =-5mA, f=100MHz

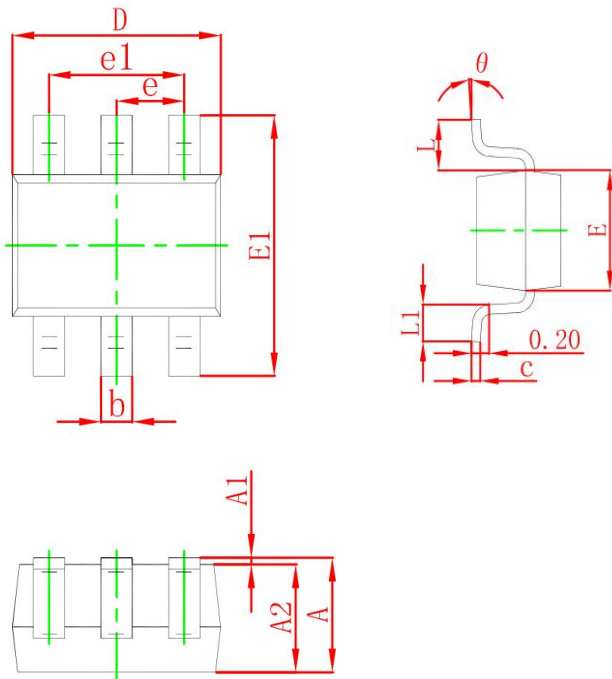
PNP DTA143E Electrical Characteristics (T_A = 25 °C, unless otherwise specified)

Characteristics	Symbol	Min	Typ	Max	Unit	Conditions
Input voltage	V _{I(off)}	-0.5	--	--	V	V _{CC} =-5V, I _O =-100μA
	V _{I(on)}	--	--	-3	V	V _O =-0.3V, I _O =-20mA
Output voltage	V _{O(on)}	--	--	-0.3	V	I _O /I _I =-10mA/-0.5mA
Input current	I _I	--	--	-1.8	mA	V _I =-5V
Output current	I _{O(off)}	--	--	-0.5	μA	V _{CC} =-50V, V _I =0
DC current gain	G _I	30	--	--		V _O =-5V, I _O =-10mA
Input resistance	R ₁	3.3	4.7	6.1	KΩ	--
Resistance ratio	R ₂ /R ₁	0.8	1.0	1.2	--	--
Transition frequency	f _T	--	250	--	MHz	V _{CE} =-10V, I _E =5mA, f=100MHz



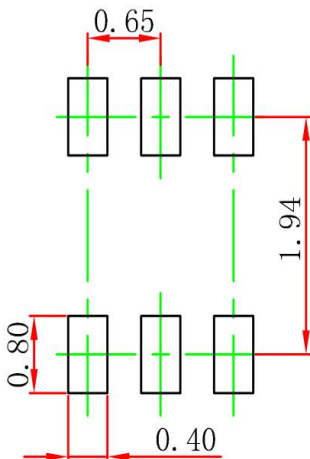
Package Outline Dimensions

SOT-363



Symbol	Dimensions (mm)	
	Min	Max
A	0.90	1.10
A1	0.00	0.10
A2	0.90	1.00
b	0.15	0.35
c	0.08	0.15
D	2.00	2.20
E1	2.15	2.41
E	1.15	1.35
e	0.650TYP	
e1	1.20	1.40
L	0.26	0.46
L1	0.525REF	
o	0°	8°

Suggested Pad Layout (mm)



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.