

## Bias Resistor Transistors

NPN Silicon Surface Mount Transistors with Monolithic

Bias Resistor Network

### FEATURES

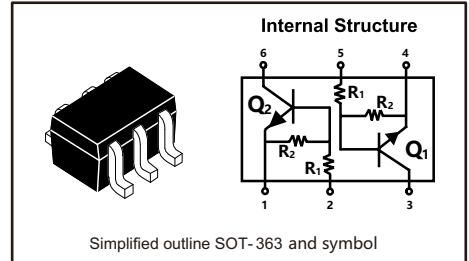
- Reduces board space
- Simplifies Circuit Design
- Reduces Board Space and Component Count

### Mechanical Data

- Case: SOT-363
- $R_1 = 4.7K\Omega$  (Typ),  $R_2 = \text{open}$

### PINNING

PIN	DESCRIPTION
2,5	BASE
1,4	EMITTER
3,6	COLLECTOR



### MAXIMUM RATINGS (Ta = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$V_{CB0}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Output current	$I_C$	100	mA
Power dissipation	$P_D$	250	mW
Thermal Resistance – Junction-to-Ambient	$R_{\theta JA}$	500	°C/W
Junction temperature	$T_J$	150	°C
Range of storage temperature	$T_{stg}$	-55~ +150	°C

### ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted.)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	50			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 2mA, I_B = 0$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 2mA, I_C = 0$	6			V
Collector-Base Cut off Current	$I_{CBO}$	$V_{CB} = 50V, I_E = 0$			100	nA
Collector-Emitter Cut off Current	$I_{CEO}$	$V_{CE} = 50V, I_B = 0$			500	nA
Emitter-Base Cut off Current	$I_{EBO}$	$V_{EB} = 6V, I_C = 0$			1.9	mA
DC Current Gain	$h_{FE}$	$V_{CE} = 10V, I_C = 5mA$	160			
Output Voltage (on)	$V_{OL}$	$V_{CE} = 5.0V, V_{BE} = 2.5V, R_L = 1.0K\Omega$			0.2	V
Output Voltage (off)	$V_{OH}$	$V_{CE} = 5.0V, V_{BE} = 0.25V, R_L = 1.0K\Omega$	4.9			V
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10mA, I_B = 1mA$			0.25	V
Input Voltage (off)	$V_{I(off)}$	$V_{CE} = 5V, I_C = 100\mu A$	0.5			V
Input Voltage (on)	$V_{I(on)}$	$V_{CE} = 0.3V, I_C = 10mA$			1.3	V
Input resistance	$R_1$		3.3	4.7	6.1	K $\Omega$
Input resistance	$R_2$		-	-	-	K $\Omega$
Resistance ratio	$R_2 / R_1$		-	-	-	



Typical Performance Characteristics

Fig 1. VCE(sat) versus IC

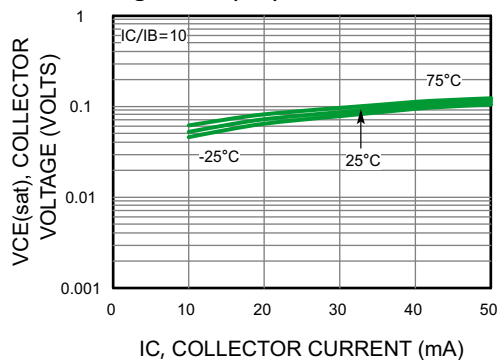


Fig 2. DC Current Gain

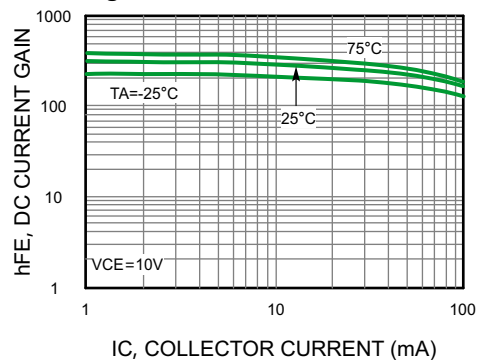


Fig 3. Output Capacitance

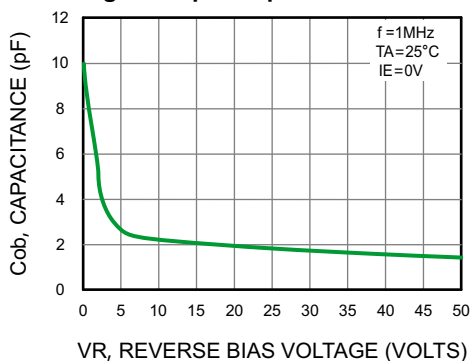


Fig 4. Output Current versus Input Voltage

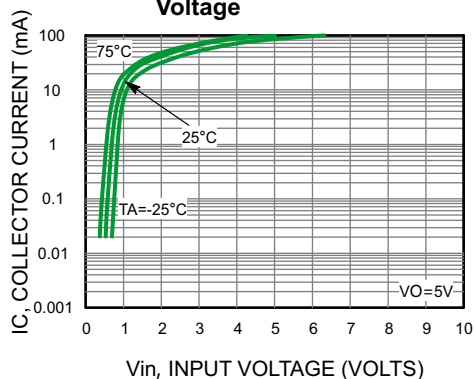
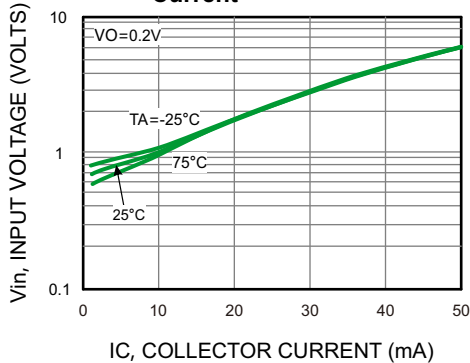
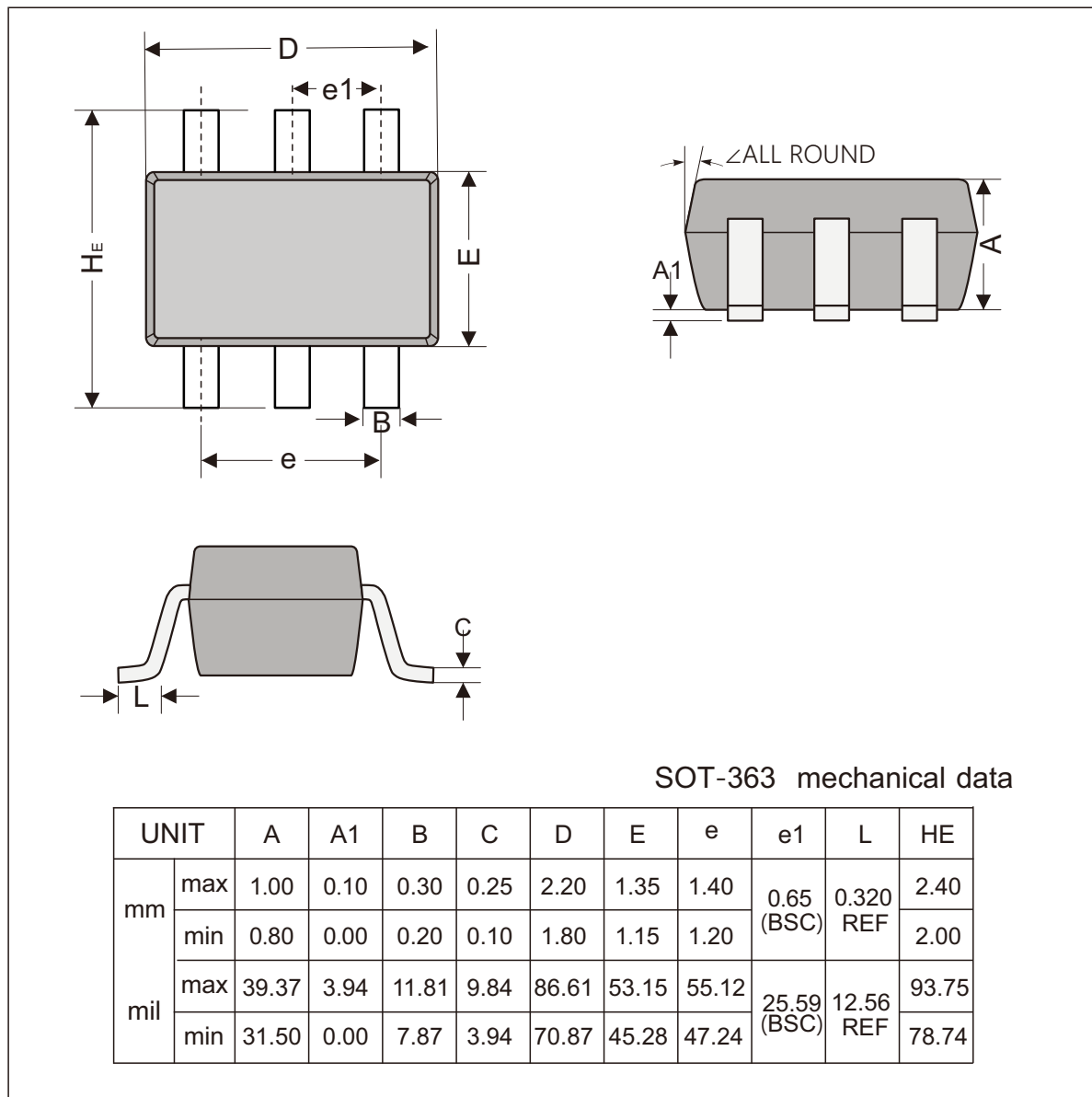


Fig 5. Input Voltage versus Output Current

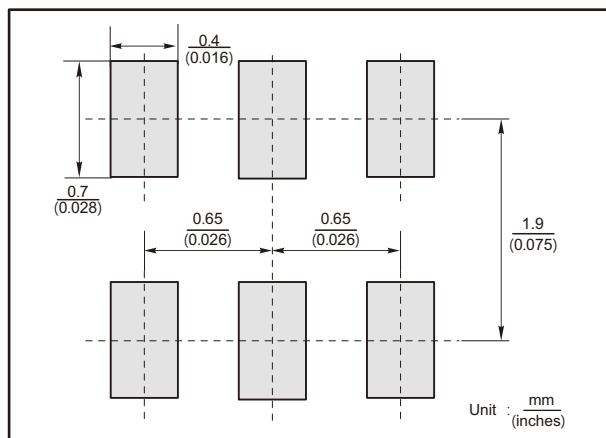




SOT-363 Package Outline Dimensions



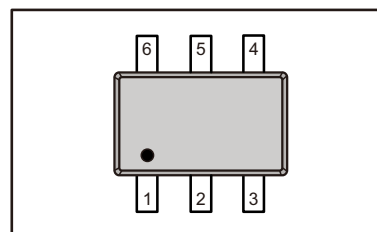
The recommended mounting pad size



Marking

Type number	Marking code
JDTC243TWH	43T

Pin Point





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