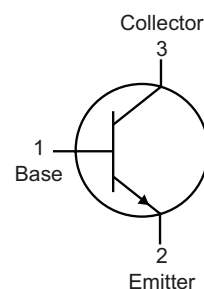
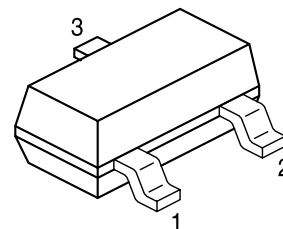


NPN General Purpose Amplifier



Features:

- Low Current (Max.100mA)
- Low Voltage (Max.45V)
- Low Noise

Applications:

- General Purpose Switching and Amplification

Pin Configuration:

1. Base
2. Emitter
3. Collector

Maximum Ratings

Parameter	Symbol	Value	Unit
Collector - Base Voltage	V_{CBO}	50	V
Collector - Emitter Voltage	V_{CEO}	45	
Emitter - Base Voltage	V_{ebo}	5	
Collector Current Continuous	I_C	100	mA
Collector Current - Peak	I_{CM}	200	
Peak Base Current	I_{BM}	200	
Total Power Dissipation	P_D	250	mW
Thermal resistance from junction to ambient	$R_{th\ j-a}$	500	K/W
Junction and Storage Temperature	T_j, T_{stg}	-65 to +150	°C

NPN General Purpose Amplifier



Electrical Characteristics ($T_a = 25^\circ\text{C}$ unless otherwise noted)

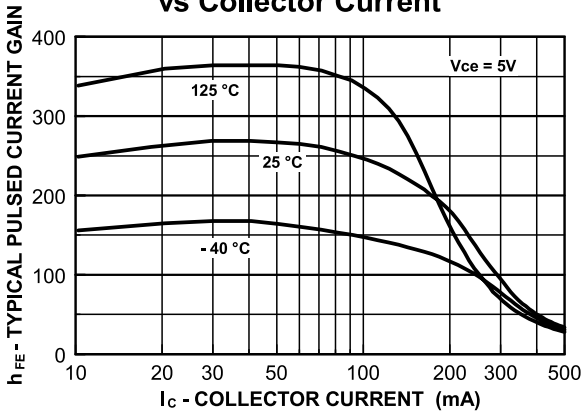
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	50			V
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	45			
Emmitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	5			
Collector Cut-Off Current	I_{CBO}	$V_{CB}=20\text{V}, I_E=0$			100	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5\text{V}, I_C=0$			100	
DC Current Gain	BCW71 BCW72 BCW71 BCW72	h_{FE}		90 150		
		$V_{CE}=5\text{V}, I_C=10\mu\text{A}$ $V_{CE}=5\text{V}, I_C=2\text{mA}$	110 200		220 450	
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=50\text{mA}, I_B=2.5\text{mA}$		0.12 0.21	0.25	V
Base - Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10\text{mA}, I_B=0.5\text{mA}$ $I_C=50\text{mA}, I_B=2.5\text{mA}$		0.75 0.85		
Base Emitter Voltage	V_{BE}	$I_C=2\text{mA}, V_{CE}=5\text{V}$	0.55		0.7	
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA},$ $f=100\text{MHz}$	100			MHz
Collector Capacitance	C_C	$I_E=I_e=0, V_{CB}=10\text{V}, f=1\text{MHz}$		2.5		pF
Noise Figure	NF	$V_{CE}=5\text{V}, I_C=200\mu\text{A}, R_S=2\text{k}\Omega$ $f=1\text{kHz}, B=200\text{Hz}$			10	dB

NPN General Purpose Amplifier

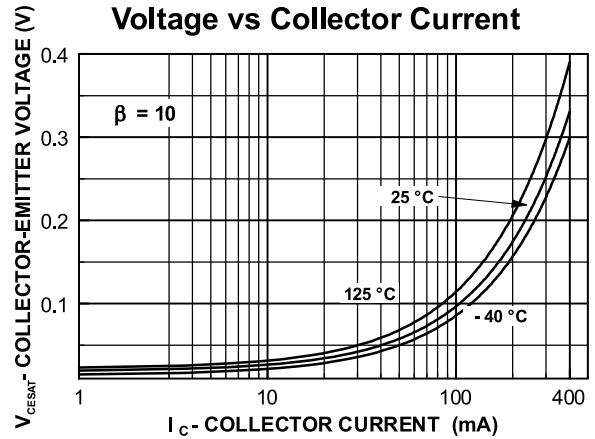
Typical Characteristics: ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Ratings & Characteristic Curves

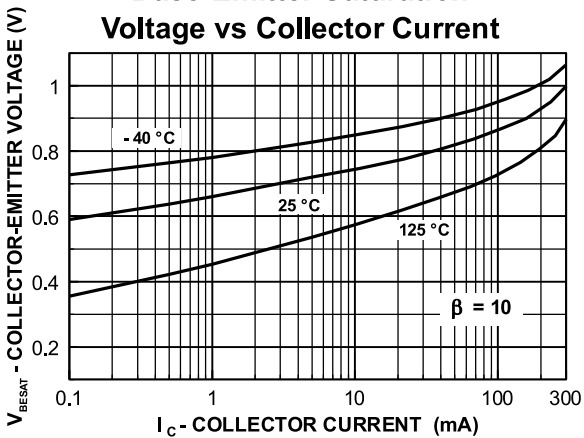
Typical Pulsed Current Gain vs Collector Current



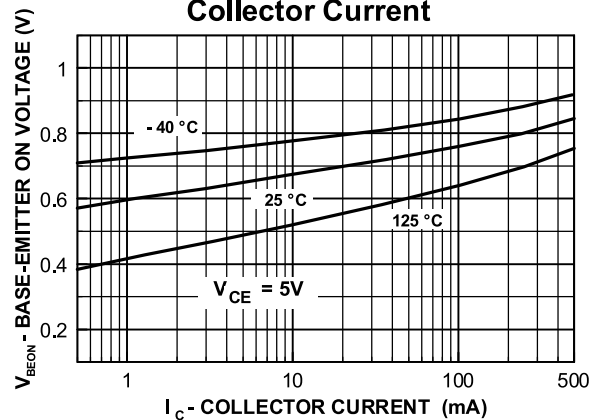
Collector-Emitter Saturation Voltage vs Collector Current



Base-Emitter Saturation Voltage vs Collector Current



Base-Emitter ON Voltage vs Collector Current

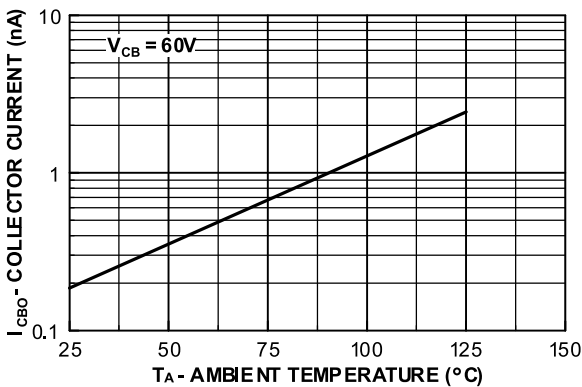


NPN General Purpose Amplifier

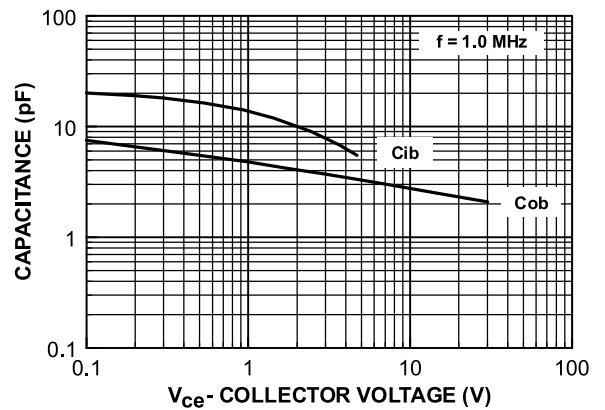
Typical Characteristics: ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Ratings & Characteristic Curves

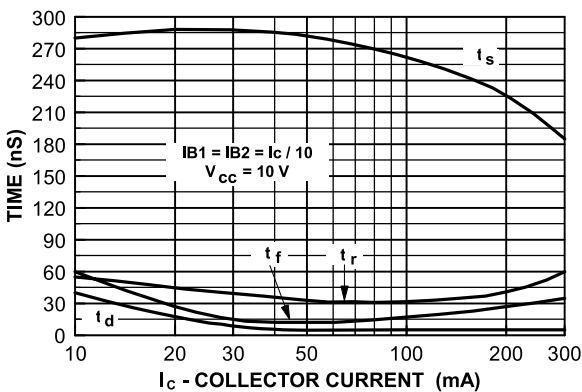
Collector-Cutoff Current vs Ambient Temperature



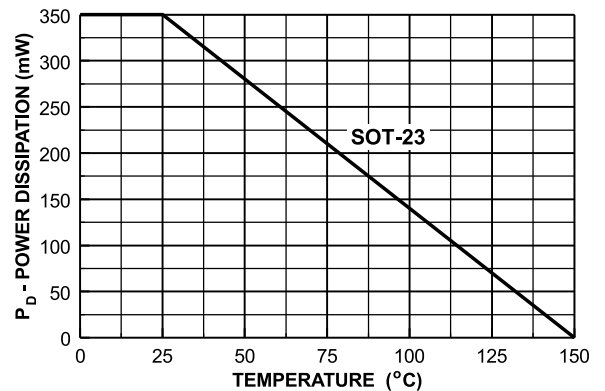
Input and Output Capacitance vs Reverse Voltage



Switching Times vs Collector Current



Power Dissipation vs Ambient Temperature

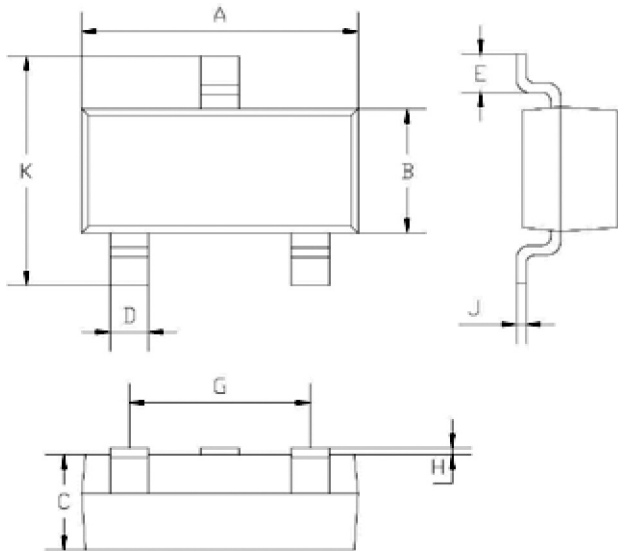


NPN General Purpose Amplifier



Package Outline

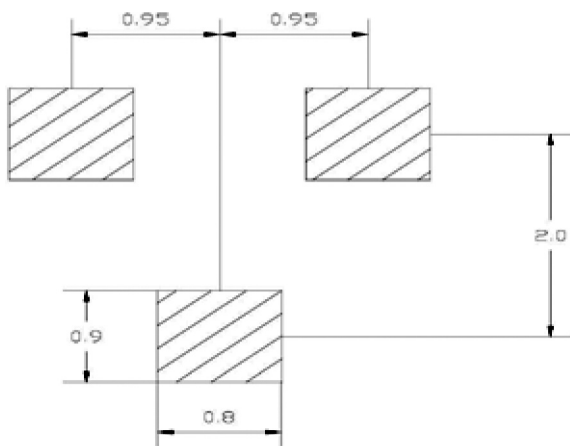
Plastic surface mounted package



Dimensions	Min.	Max.
A	2.85	2.95
B	1.25	1.35
C	1 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.85	1.95
H	0.02	0.1
J	0.1 Typical	
K	2.35	2.45

Dimensions : Millimetres

Soldering Footprint



Dimensions : Millimetres

Part Number Table

Description	Part Number
Transistor, NPN, 0.1A, 45V, SOT23	BCW71
Transistor, NPN, 0.1A, 45V, SOT23	BCW72

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