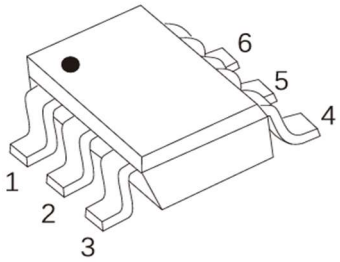
NPN+PNP Plastic-Encapsulate Transistors

Features

- Low profile package
- Ideal for automated placement
- Power Dissipation of 200mW
- High Stability and High Reliability
- Epitaxial Planer Die Construction

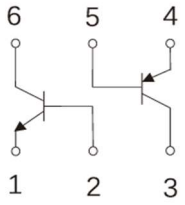
Appearance & Symbol

SOT-363



Mechanical Data

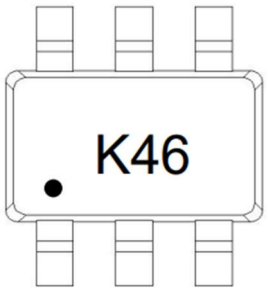
- Package: SOT-363
- Mounting Position: Any
- Terminals: Plated solderable per MIL-STD-750, method 2026
- Tape Reel: 3000pcs



Application

- Amplifying signal
- Electronic switch
- Oscillating circuit
- Variable resistance

Marking information



Pin1

K46= Marking Code

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

Parameter	Symbol	Value		Unit
		TR1	TR2	
Collector-Base Voltage	V_{CBO}	60	-40	V
Collector-Emitter Voltage	V_{CEO}	40	-40	V
Emitter-Base Voltage	V_{EBO}	5	-5	V
Collector Current - Continuous	I_C	200	-200	mA
Collector Power Dissipation	P_D	200		mW
Junction Temperature	T_J	-55 to +150		℃
Junction and Storage Temperature	T_{STG}	-55 to +150		℃
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625		°C/W

TR1 NPN Electrical Characteristics (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10uA, I_E=0	60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10uA, I_C=0	5		V
Collector cut-off current	I_{CBO}	V_{CB}=30V, I_E=0		0.05	μA
Emitter cut-off current	I_{EBO}	V_{EB}=5V, I_C=0		0.05	μA
DC current gain	h_{FE}	V_{CE}=1V, I_C=0.1mA	40		
		V_{CE}=1V, I_C=1mA	70		
		V_{CE}=1V, I_C=10mA	100	300	
		V_{CE}=1V, I_C=50mA	60		
		V_{CE}=1V, I_C=100mA	30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=10mA, I_B=1mA		0.2	V
		I_C=50mA, I_B=5mA		0.3	V
Base -emitter saturation voltage	$V_{BE(sat)}$	I_C=10mA, I_B=1mA	0.65	0.85	V
		I_C=50mA, I_B=5mA		0.95	V
Transition frequency	f_T	V_{CE}=20V, I_C=20mA, f=100MHz	300		MHz
Output capacitance	C_{ob}	V_{CB}=5V, I_E=0, f=1MHz		4	pF
Noise figure	NF	V_{CE}=5V, I_C=0.1mA, f=1MHz		5	dB
Delay Time	td	V_{CC}=3V, V_{BE}(off)=0.5V I_C=10mA, I_{B1}=1mA		35	ns
Rise Time	tr			35	ns
Storage Time	ts	V_{CC}=3V, I_C=10mA I_{B1}=I_{B2}=1mA		200	ns
Fall Time	tf			50	ns

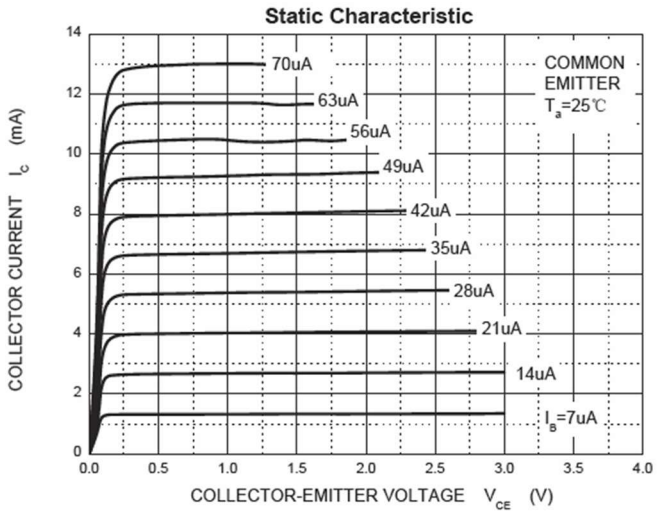
Notes: 1. Pulse Test: Pulse Width≤300us, Duty cycle ≤2%.

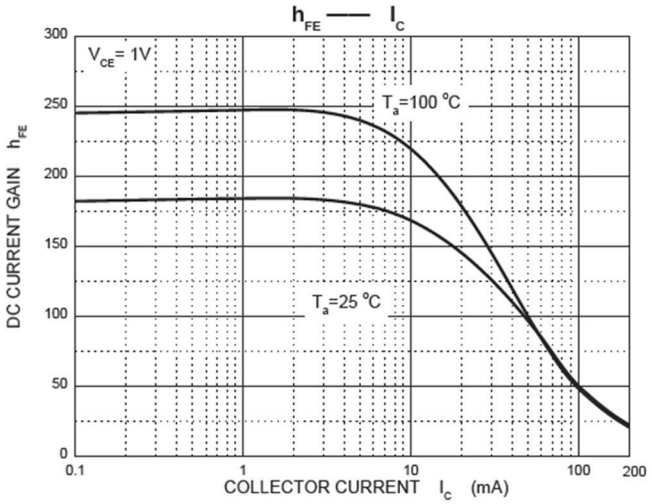
TR2 PNP Electrical Characteristics (T_A = 25°C unless otherwise specified)

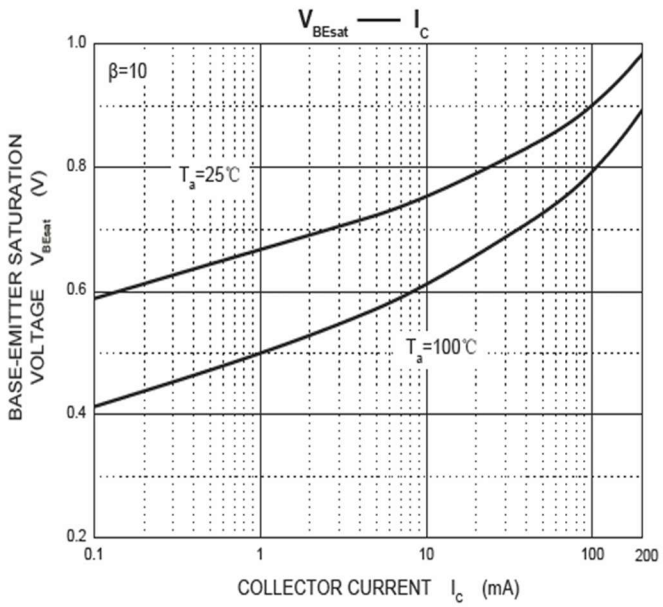
Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=-10uA, I_E=0	-40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=-1mA, I_B=0	-40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=-10uA, I_C=0	-5		V
Collector cut-off current	I_{CBO}	V_{CB}=-30V, I_E=0		-0.05	μA
Emitter cut-off current	I_{EBO}	V_{EB}=-5V, I_C=0		-0.05	μA
DC current gain	h_{FE}	V_{CE}=-1V, I_C=-0.1mA	60		
	h_{FE}	V_{CE}=-1V, I_C=-1mA	80		
	h_{FE}	V_{CE}=-1V, I_C=-10mA	100	300	
	h_{FE}	V_{CE}=-1V, I_C=-50mA	60		
	h_{FE}	V_{CE}=-1V, I_C=-100mA	30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=-10mA, I_B=-1mA		-0.25	V
		I_C=-50mA, I_B=-5mA		-0.4	V
Base -emitter saturation voltage	$V_{BE(sat)}$	I_C=-10mA, I_B=-1mA	-0.65	-0.85	V
		I_C=-50mA, I_B=-5mA		-0.95	V
Transition frequency	f_T	V_{CE}=-20V, I_C=-10mA, f=100MHz	250		MHz
Output capacitance	C_{ob}	V_{CB}=-5V, I_E=0, f=1MHz		4.5	pF
Noise figure	NF	V_{CE}=-5V, I_E=-0.1mA, f=1MHz		4	dB
Delay Time	td	V_{CC}=-3V, V_{BE}(off)=-0.5V I_C=-10mA, I_{B1}=-1mA		35	ns
Rise Time	tr			35	ns
Storage Time	ts	V_{CC}=-3V, I_C=-10mA I_{B1}=I_{B2}=-1mA		225	ns
Fall Time	tf			75	ns

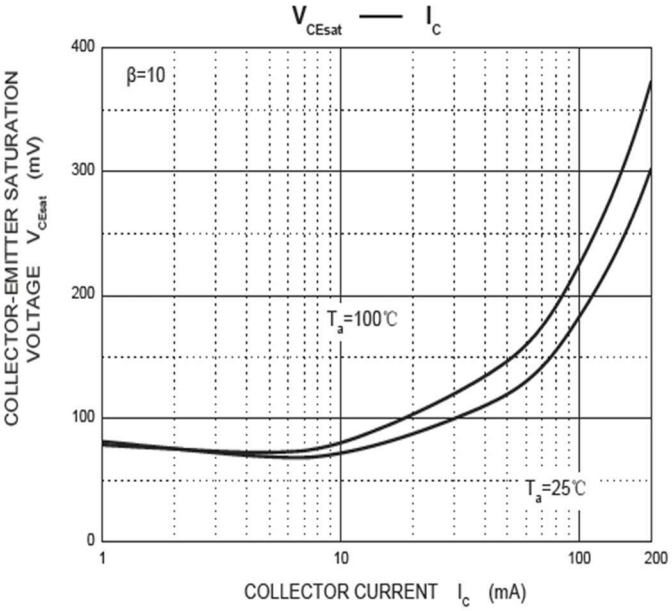
Notes: 1. Pulse Test: Pulse Width≤300us, Duty cycle ≤2%.

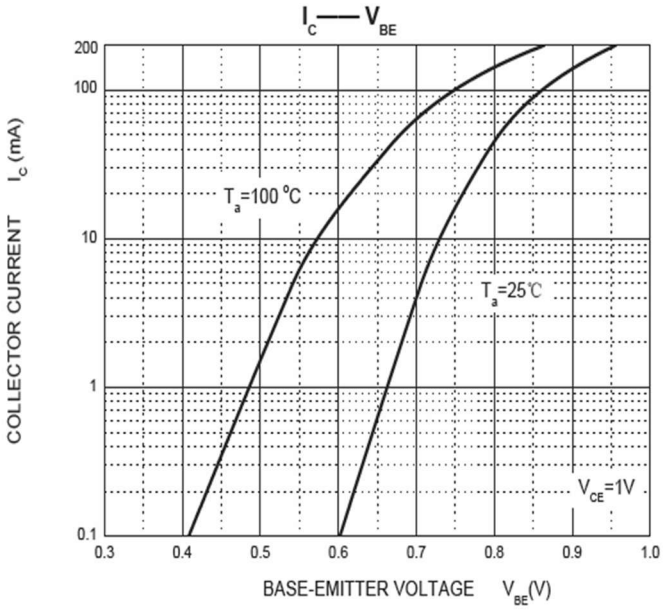
TR1 NPN Typical Characteristics

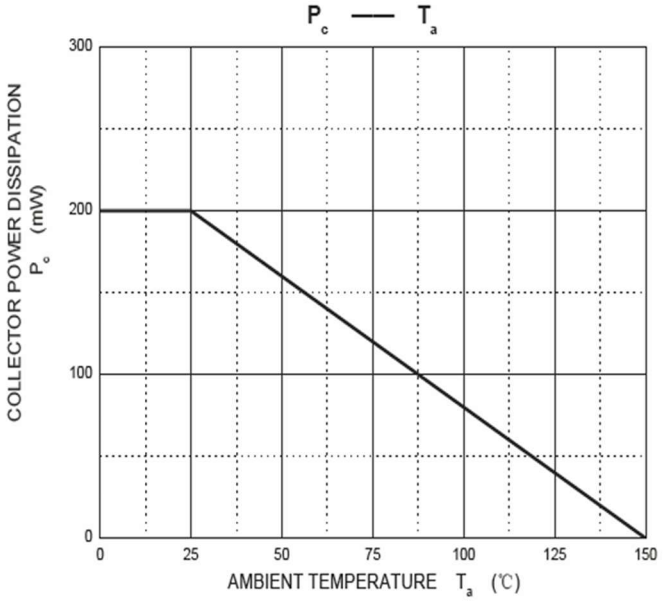




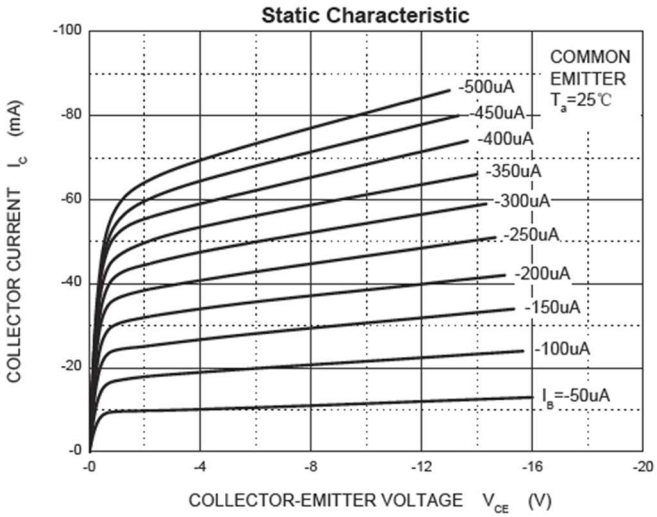


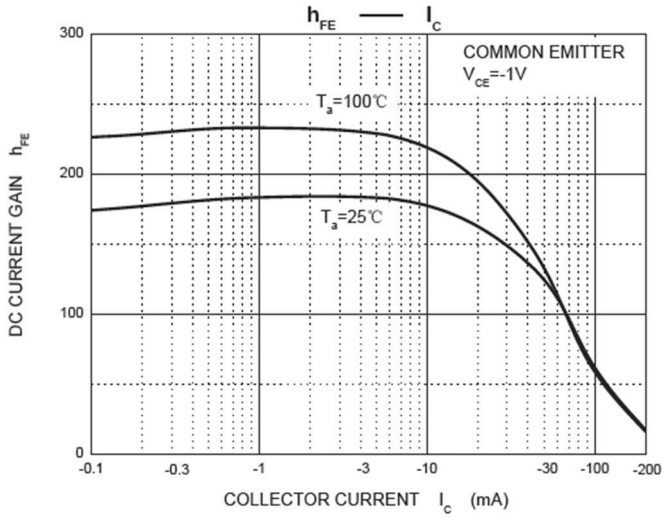


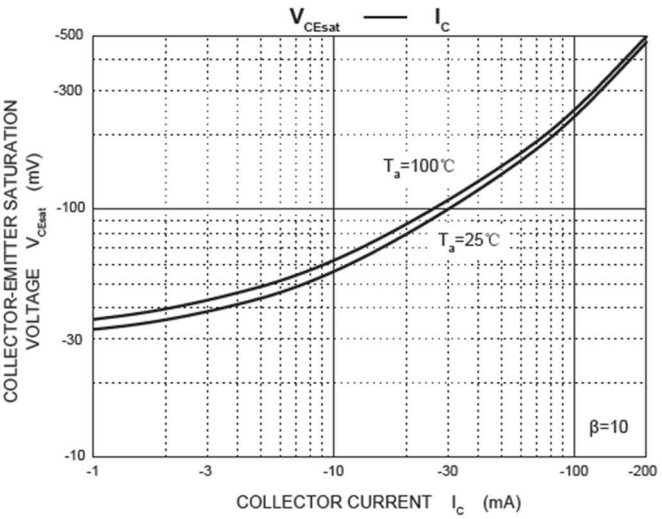


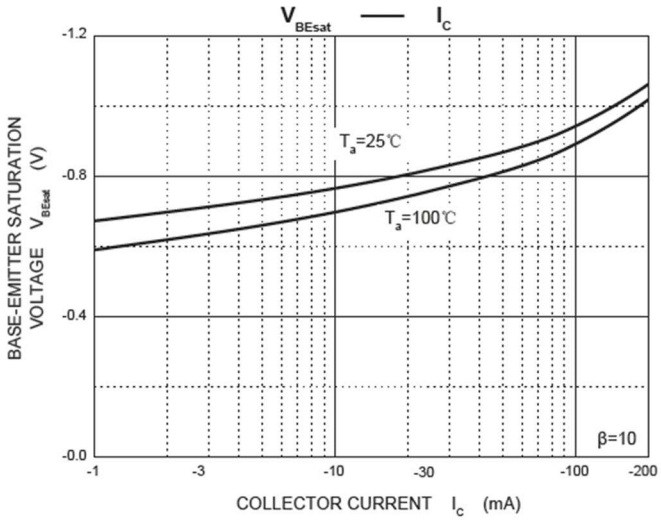


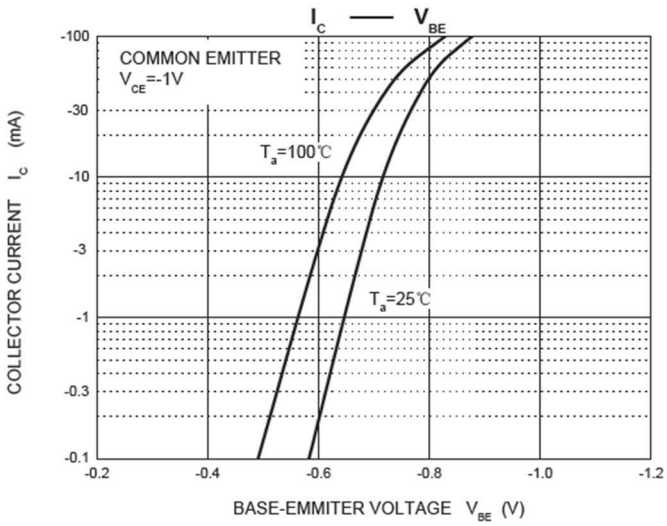
TR2 PNP Typical Characteristics

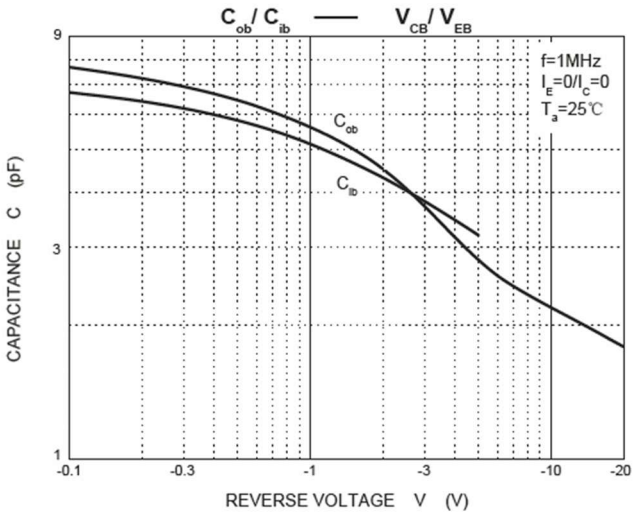


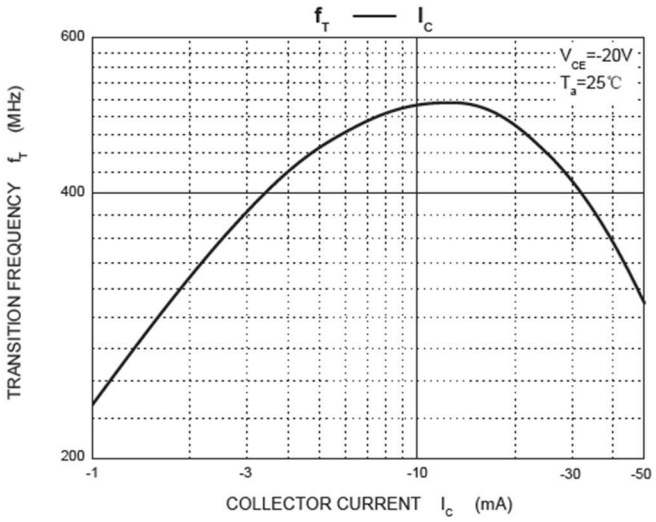


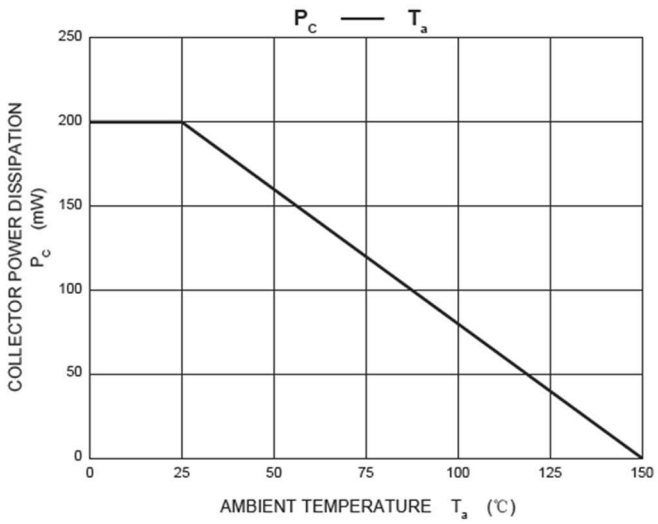




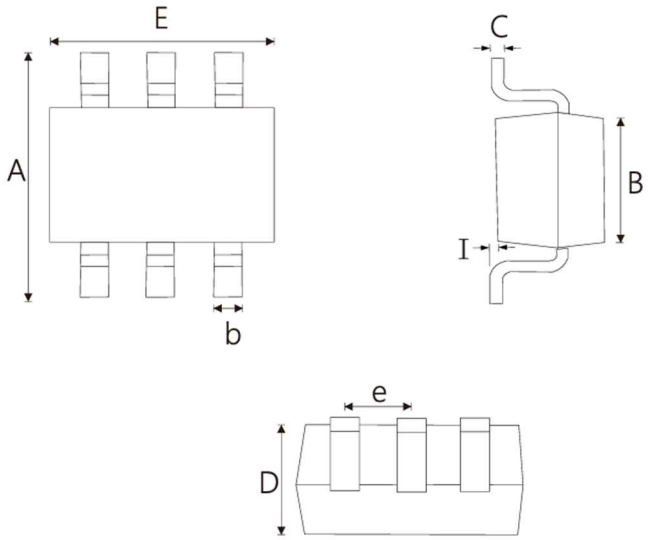








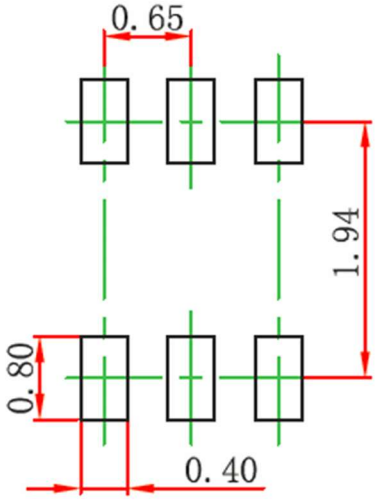
Package Outline Dimensions (Units: mm) SOT-363



SOT-363		
Dim	Min	Max
A	2.15	2.45
B	1.15	1.35
C	0.05	0.15
D	0.90	1.00
E	2.00	2.20
e	0.60	0.70
b	0.15	0.35
I	0.02	0.10

Dimensions in millimeters

Suggested pad layout



Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.