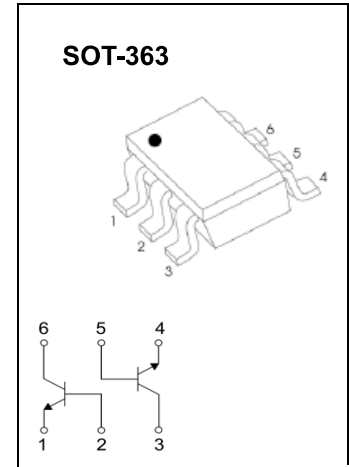


## FEATURES

- Epitaxial planar die construction
- Ideal for low power amplification and switching

## MARKING:K6N



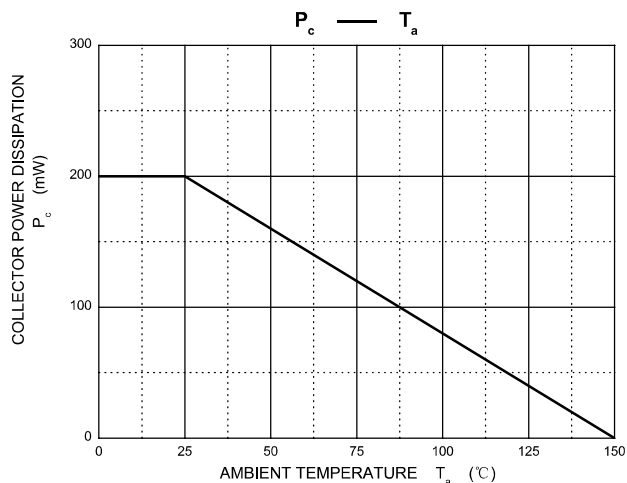
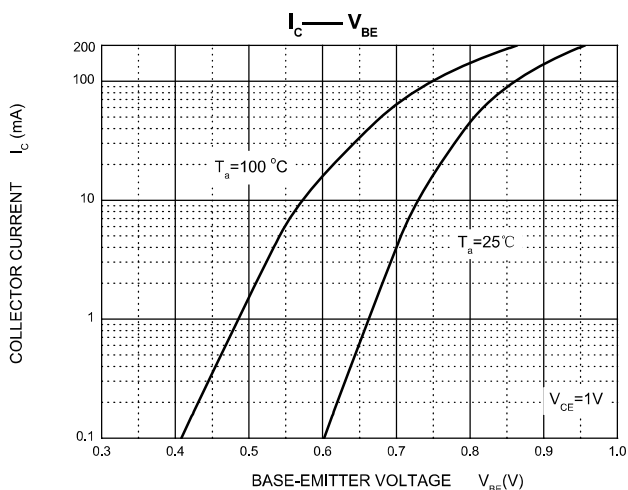
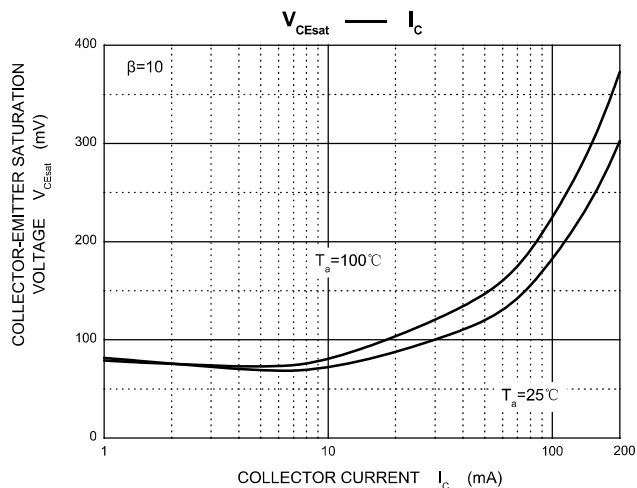
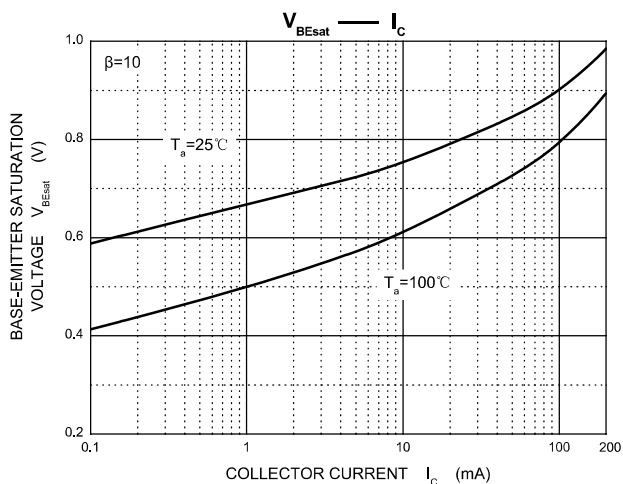
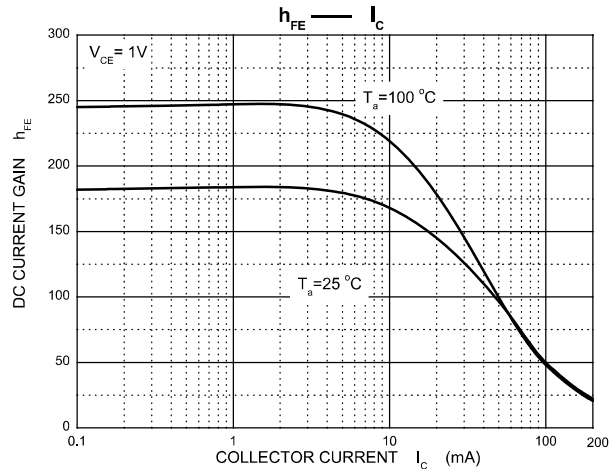
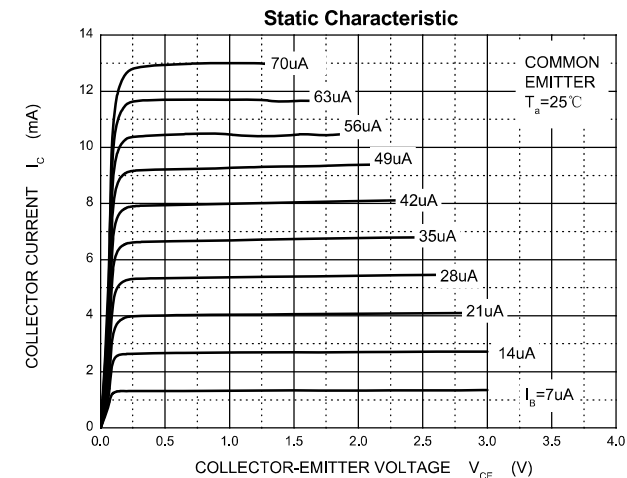
## MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V <sub>CB0</sub>	Collector-Base Voltage	60	V
V <sub>CEO</sub>	Collector-Emitter Voltage	40	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current -Continuous	0.2	A
P <sub>C</sub>	Collector Power Dissipation	0.2	W
T <sub>J</sub> , T <sub>stg</sub>	Operation Junction and Storage Temperature Range	-55~+150	°C

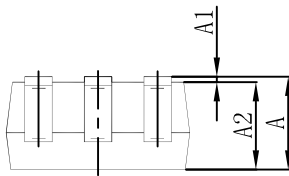
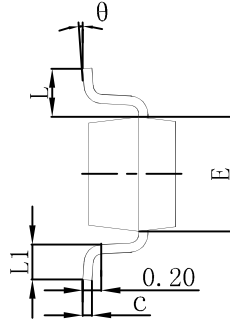
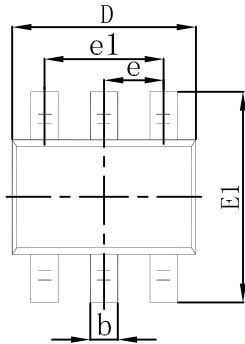
## ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =10μA, I <sub>E</sub> =0	60			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	40			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =10μA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =30V, I <sub>E</sub> =0			0.05	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			0.05	μA
Collector cut-off current	I <sub>CEX</sub>	V <sub>CE</sub> =30V, V <sub>BE(off)</sub> =3V			0.05	μA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =0.1mA	40			
	h <sub>FE(2)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =1mA	70			
	h <sub>FE(3)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =10mA	100		300	
	h <sub>FE(4)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =50mA	60			
	h <sub>FE(5)</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =100mA	30			
Collector-emitter saturation voltage	V <sub>CE(sat)1</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA			0.2	V
	V <sub>CE(sat)2</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			0.3	V
Base-emitter saturation voltage	V <sub>BE(sat)1</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1mA	0.65		0.85	V
	V <sub>BE(sat)2</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> =5mA			0.95	V
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> =20V, I <sub>C</sub> =10mA, f=100MHz	300			MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =5V, I <sub>E</sub> =0, f=1MHz			4	pF
Noise figure	NF	V <sub>CE</sub> =5V, I <sub>C</sub> =0.1mA, f=1kHz, R <sub>S</sub> =1KΩ			5	dB
Delay time	t <sub>d</sub>	V <sub>CC</sub> =3V, V <sub>BE(off)</sub> =-0.5V			35	nS
Rise time	t <sub>r</sub>	I <sub>C</sub> =10mA, I <sub>B1</sub> =-I <sub>B2</sub> =1mA			35	nS
Storage time	t <sub>s</sub>	V <sub>CC</sub> =3V, I <sub>C</sub> =10mA			200	nS
Fall time	t <sub>f</sub>	I <sub>B1</sub> =-I <sub>B2</sub> =1mA			50	nS

## Typical Characteristics

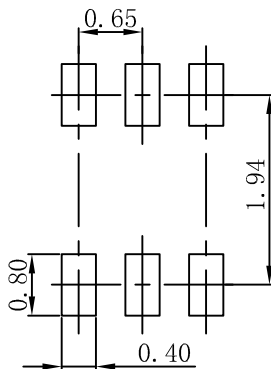


**SOT-363 Package Outline Dimensions**



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.100	0.150	0.004	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.400	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
theta	0°	8°	0°	8°

**SOT-363 Suggested Pad Layout**



**Note:**

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