

**NKGLBDT**

南科功率半导体

## Product Specification

WEB | [www.nkglbdt.com](http://www.nkglbdt.com)



### Description

This Bipolar Junction Transistor (BJT) is designed to meet the stringent requirements of Automotive Applications.

### Features

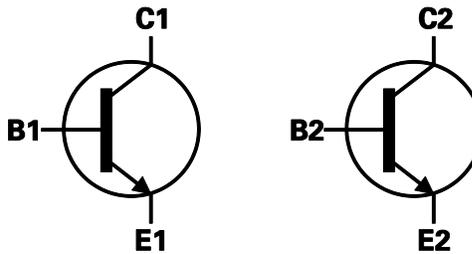
- $BV_{CEO} > 65V$
- $I_C = 100mA$  High Collector Current
- Complementary PNP Types Available (BC856ASQ)
- Ideally Suited for Automatic Insertion
- For Switching and AF Amplifier Applications

### Mechanical Data

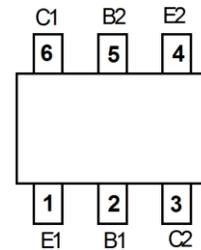
- Case: SOT363
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish — Matte Tin Finish. Solderable per MIL-STD-202, Method 208 **e3**
- Weight: 0.006 grams (Approximate)



Top View



Device Symbol



Top View Pin-Out

**Absolute Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CB0</sub>	80	V
Collector-Emitter Voltage	V <sub>CE0</sub>	65	V
Emitter-Base Voltage	V <sub>EB0</sub>	6.0	V
Collector Current	I <sub>C</sub>	100	mA
Peak Collector Current	I <sub>CM</sub>	200	mA
Peak Emitter Current	I <sub>EM</sub>	200	mA

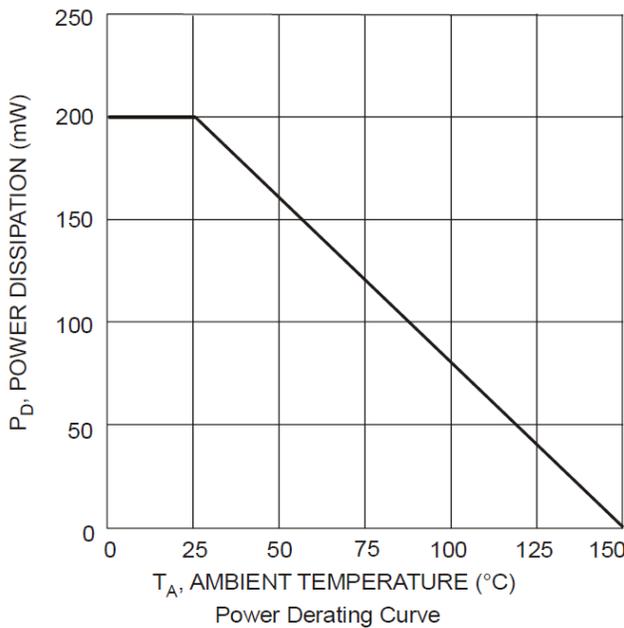
**Thermal Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P <sub>D</sub>	200	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	R <sub>θJA</sub>	625	°C/W
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

**ESD Ratings** (Note 7)

Characteristic	Symbol	Value	Unit	JEDEC Class
Electrostatic Discharge - Human Body Model	ESD HBM	4,000	V	3B
Electrostatic Discharge - Machine Model	ESD MM	400	V	C

Notes: 6. For a device mounted on minimum recommended pad layout FR-4 PCB with high coverage of single sided 1oz copper; device is measured under still air conditions whilst operating in a steady-state.  
 7. Refer to JEDEC specification JESD22-A114 and JESD22-A115.

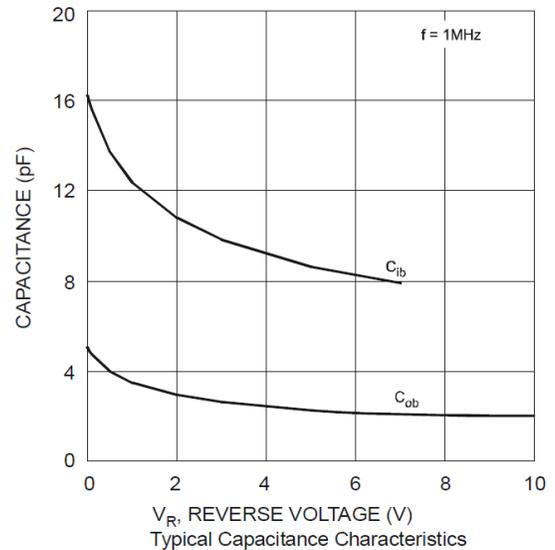
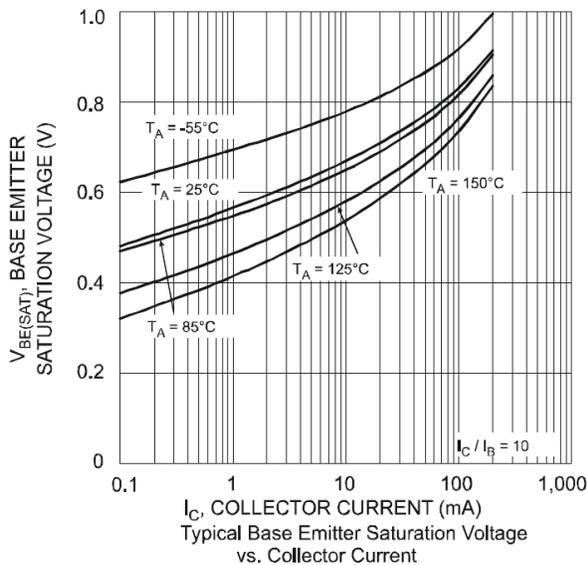
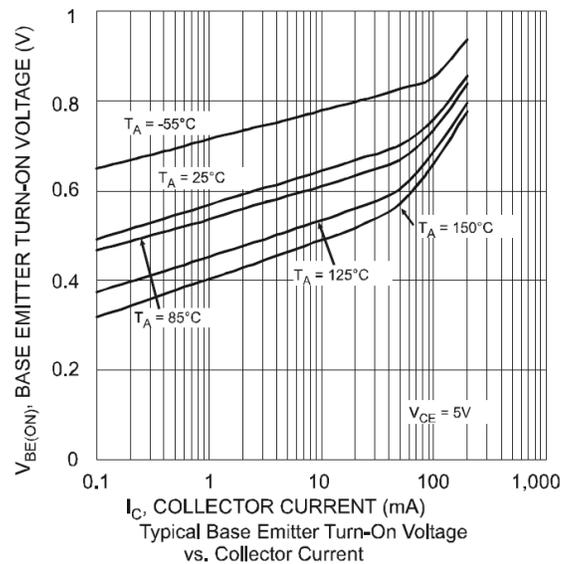
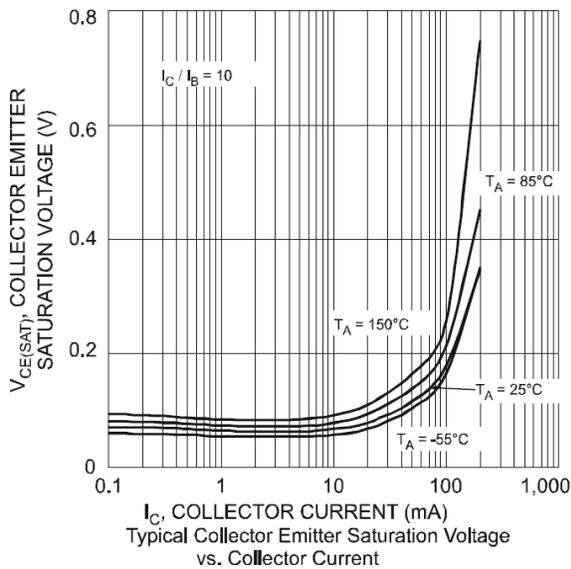
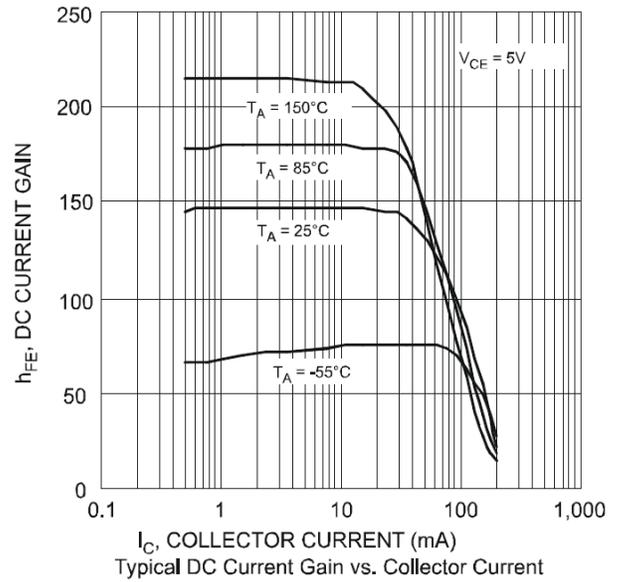
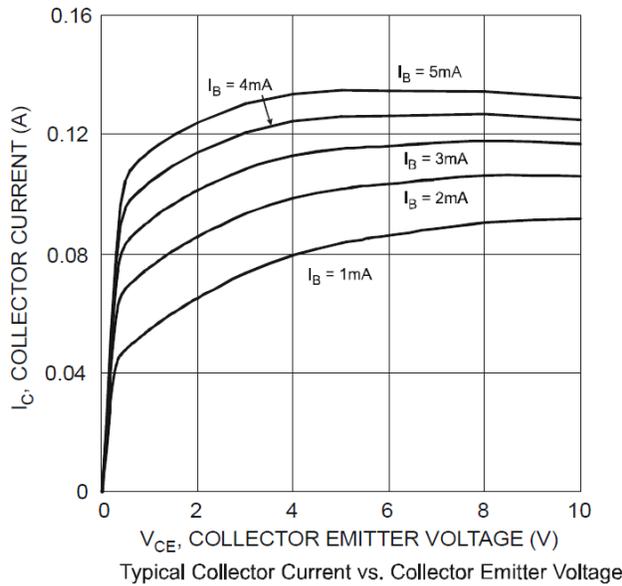


**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

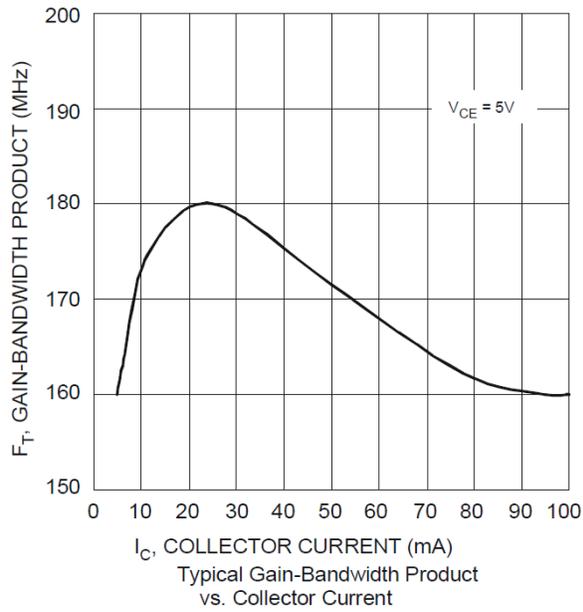
Characteristic (Note 8)	Symbol	Min	Typ	Max	Unit	Test Condition
Collector-Base Breakdown Voltage	BV <sub>CB0</sub>	80	—	—	V	I <sub>C</sub> = 10μA
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	65	—	—	V	I <sub>C</sub> = 10mA
Emitter-Base Breakdown Voltage	BV <sub>EB0</sub>	6	—	—	V	I <sub>E</sub> = 1μA
DC Current Gain	h <sub>FE</sub>	110	—	220	—	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 2.0mA
Collector-Emitter Saturation Voltage	V <sub>CE(SAT)</sub>	—	90 200	250 600	mV	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0.5mA I <sub>C</sub> = 100mA, I <sub>B</sub> = 5.0mA
Base-Emitter Saturation Voltage	V <sub>BE(SAT)</sub>	—	700 900	—	mV	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0.5mA I <sub>C</sub> = 100mA, I <sub>B</sub> = 5.0mA
Base-Emitter Voltage	V <sub>BE(ON)</sub>	580 —	660 —	700 770	mV	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 2.0mA V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 10mA
Collector-Cutoff Current	I <sub>CES</sub> I <sub>CB0</sub> I <sub>CBO</sub>	— — —	— — —	15 15 5.0	nA nA μA	V <sub>CE</sub> = 80V V <sub>CB</sub> = 40V V <sub>CB</sub> = 30V, T <sub>A</sub> = +150°C
Gain Bandwidth Product	f <sub>T</sub>	100	—	—	MHz	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 10mA, f = 100MHz
Collector-Base Capacitance	C <sub>CB</sub>	—	2	—	pF	V <sub>CB</sub> = 10V, f = 1.0MHz

Note: 8. For Short duration pulse test used to minimize self-heating effect.

Typical Electrical Characteristics (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

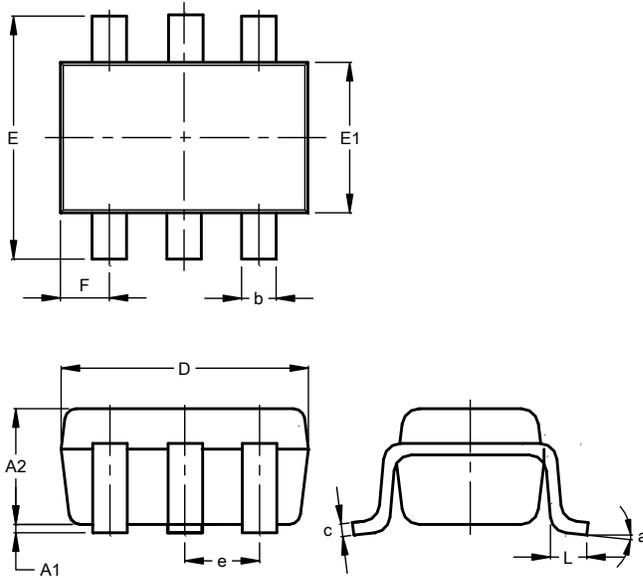


**Typical Electrical Characteristics** (Cont. @T<sub>A</sub> = +25°C, unless otherwise specified.)



Package Outline Dimensions

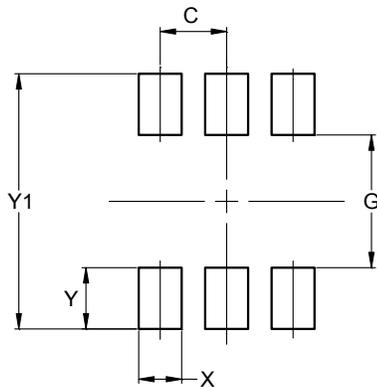
SOT363



SOT363			
Dim	Min	Max	Typ
A1	0.00	0.10	0.05
A2	0.90	1.00	1.00
b	0.10	0.30	0.25
c	0.10	0.22	0.11
D	1.80	2.20	2.15
E	2.00	2.20	2.10
E1	1.15	1.35	1.30
e	0.650 BSC		
F	0.40	0.45	0.425
L	0.25	0.40	0.30
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

SOT363



Dimensions	Value (in mm)
C	0.650
G	1.300
X	0.420
Y	0.600
Y1	2.500