PNP Transistor Bare Die - BC556

Rev 1.0
08/01/19

General purpose medium power amplifier or switch in bare die form
Complement to NPN BC546

Features:

- High Collector Current
- Very low saturation voltage
- Well suited for low noise amplifier applications
- High Reliability Gold Back Metal
- High Reliability tested grades for Military + Space #

Ordering Information:

The following part suffixes apply:

- No suffix - MIL-STD-750 /2072 Visual Inspection
- "**H**" - MIL-STD-750 /2072 Visual Inspection
  + MIL-STD-38534 Class H LAT
- "**K**" - MIL-STD-750 /2072 Visual Inspection
  + MIL-STD-38534 Class K LAT

LAT = Lot Acceptance Test.

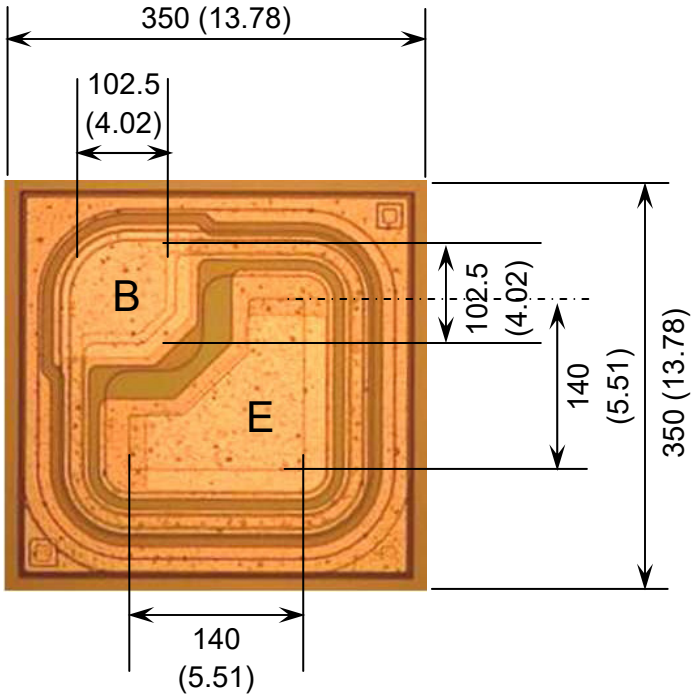
For further information on LAT process flows see below.

www.siliconsupplies.com\quality\bare-die-lot-qualification

Supply Formats:

- Default – Die in Waffle Pack (400 per tray capacity)
- Sawn Wafer on Tape – Specific request
- Unsawn Wafer – Specific request
- With additional electrical selection – Specific request
- Sawn as pairs or adjacent pair pick – Specific request

Die Dimensions in µm (mils)



E = EMITTER **B** = BASE

DIE BACK = COLLECTOR

Mechanical Specification

Die Size (Excluding Saw Street)	350 x 350 13.78 x 13.78	µm mils
Base Pad Size	102.5 x 102.5 4.02 x 4.02	µm mils
Emitter Pad Size	96 x 96 5.51 x 5.51	
Die Thickness	230 (±15) 9.06 (±0.59)	µm mils
Top Metal Composition	Al - 1.3µm	
Back Metal Composition	AuAs - 0.9µm	

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Absolute Maximum Ratings T_A = 25°C unless otherwise stated

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	-80	V
Collector-Emitter Voltage	V_{CEO}	-65	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-100	mA
Junction Temperature	T_J	150	°C
Storage Temperature	T_{stg}	-55 to 150	°C

Electrical Characteristics T_A = 25°C unless otherwise stated

PARAMETER	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS							
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = -10µA, I_E = 0		-80	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = -10mA, I_B = 0		-65	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = -10µA, I_C = 0		-5	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = -30V, I_E = 0		-	-	-15	nA
ON CHARACTERISTICS							
Forward-Current Transfer Ratio[1]	h_{FE}	BC556	V_{CE} = -5V, I_C = -2mA	110	-	800	-
		BC556A		110	-	220	-
		BC556B		200	-	450	-
		BC556C		420	-	800	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = -10mA, I_B = -0.5mA		-	-90	-300	mV
		I_C = -100mA, I_B = -5mA		-	-250	-650	mV
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = -10mA, I_B = -0.5mA		-	-700	-	mV
		I_C = -100mA, I_B = -5mA		-	-900	-	mV
Base-Emitter On Voltage	$V_{BE(on)}$	I_C = -2A, V_{CE} = -5V		-600	-660	-750	mV
		I_C = -10A, V_{CE} = -5V		-	-	-800	mV
SMALL SIGNAL CHARACTERISTICS[2]							
		V_{CE} = -5V, I_C = -10mA, f = 10 MHz		-	150	-	MHz
Output Capacitance	C_{obo}	V_{CB} = -10V, I_E = 0, f = 1MHz		-	-	6	pF
Noise Figure	NF	V_{CE} = -5V, I_C = -200µA, R_G = 2kΩ, f = 1kHz		-	2	10	dB

Note 1: Pulse Test: Pulse Width ≤ 300 µs, Duty Cycle ≤ 2%
Note 2: Not production testing in die form. Characterized by chip design and tested in package