Not Recommended for New Design
Alternative is BCP56 & BCP5616

Lead-free Green

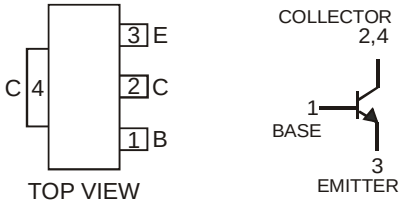
DCP56/-16

NPN SURFACE MOUNT TRANSISTOR

Features

- Epitaxial Planar Die Construction
- Complementary PNP Type Available (DCP53)
- Ideally Suited for Automated Assembly Processes
- Ideal for Medium Power Switching or Amplification Applications
- **Lead Free By Design/RoHS Compliant (Note 1)**
- **"Green" Device (Note 2)**

SOT-223



Schematic and Pin Configuration

Mechanical Data

- Case: SOT-223
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish - Matte Tin annealed over Copper leadframe (Lead Free Plating). Solderable per MIL-STD-202, Method 208
- Marking & Type Code Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.115 grams (approximate)

Maximum Ratings @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Units
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	1	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation @ T_A = 25ºC (Note 3)	P_d	1	W
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to 150	°C
Thermal Resistance, Junction to Ambient Air @T_A = 25°C (Note 3)	$R_{\theta JA}$	125	°C/W

Electrical Characteristics @T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
OFF CHARACTERISTICS (Note 4)						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	100	—	—	V	I_C = 100μA, I_E = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	80	—	—	V	I_C = 10mA, I_B = 0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5.0	—	—	V	I_E = 10μA, I_C = 0
Collector-Base Cutoff Current	I_{CBO}	—	—	0.1 20	μA	V_{CB} = 30V, I_E = 0 V_{CB} = 30V, I_E = 0,T_A = 150°C
Emitter-Base Cutoff Current	I_{EBO}	—	—	10	μA	V_{EB} = 5.0V, I_C = 0
ON CHARACTERISTICS (Note 4)						
DC Current Gain	h_{FE}	25 40 25	— — —	— 250 —	—	I_C = 5.0mA, V_{CE} = 2.0V I_C = 150mA, V_{CE} = 2.0V I_C = 500mA, V_{CE} = 2.0V
DCP56-16		100	160	250		I_C = 150mA, V_{CE} = 2.0V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	—	—	0.5	V	I_C = 500mA, I_B = 50mA
Base-Emitter Turn-On Voltage	$V_{BE\ (ON)}$	—	—	1.0	V	I_C = 500mA, V_{CE} = 2.0V
SMALL SIGNAL CHARACTERISTICS						
Current-Gain-Bandwidth Product	f_T	—	200	—	MHz	I_C = 50mA, V_{CE} = 5.0V, f = 100MHz

Notes:
1. No purposefully added lead.
2. Diodes Inc.'s "Green" Policy can be found on our website at http://www.diodes.com/products/lead_free/index.php.
3. Device mounted on FR-4 PCB; pad layout as shown on page 4 or in Diodes Inc. suggested pad layout document AP02001, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
4. Pulse Test: Pulse width = ≤300μs, Duty Cycle ≤ 2%.

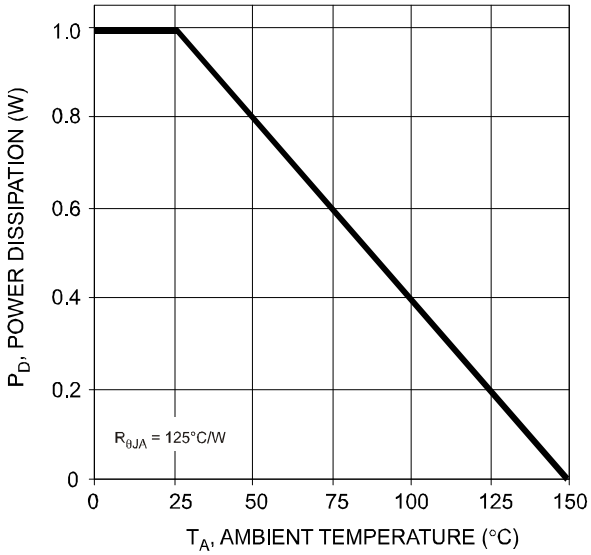


Fig. 1 Power Dissipation vs. Ambient Temperature

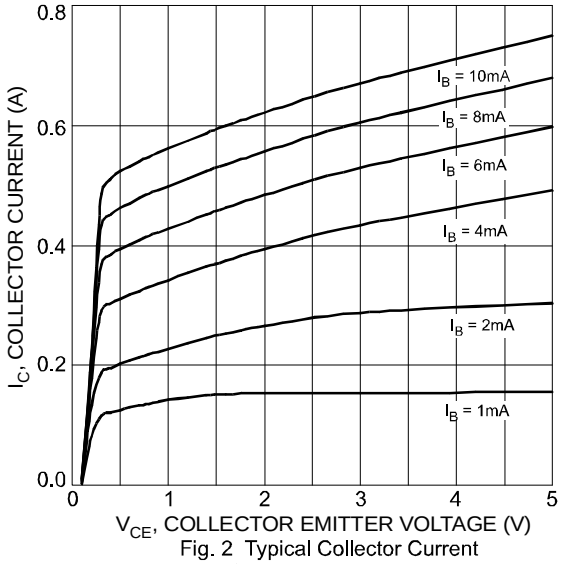


Fig. 2 Typical Collector Current
vs. Collector Emitter Voltage

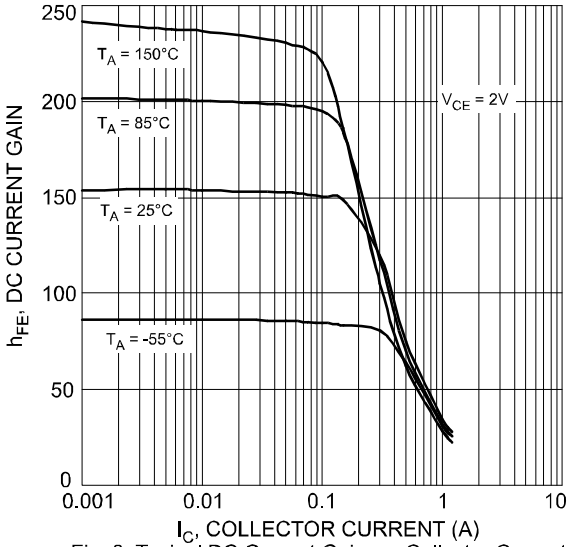


Fig. 3 Typical DC Current Gain vs. Collector Current

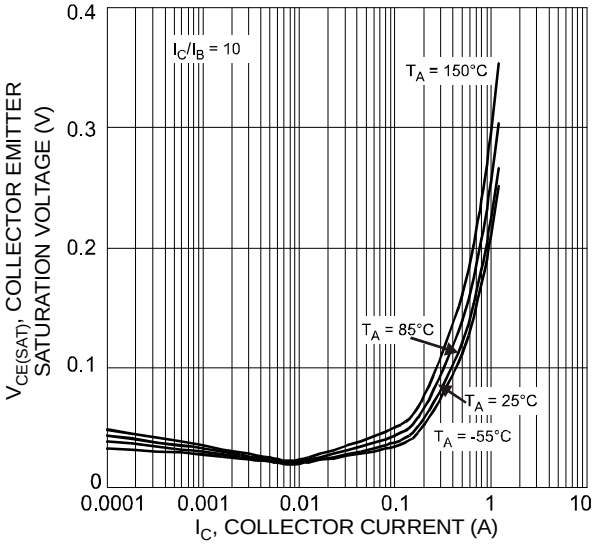


Fig. 4 Typical Collector Emitter Saturation Voltage
vs. Collector Current

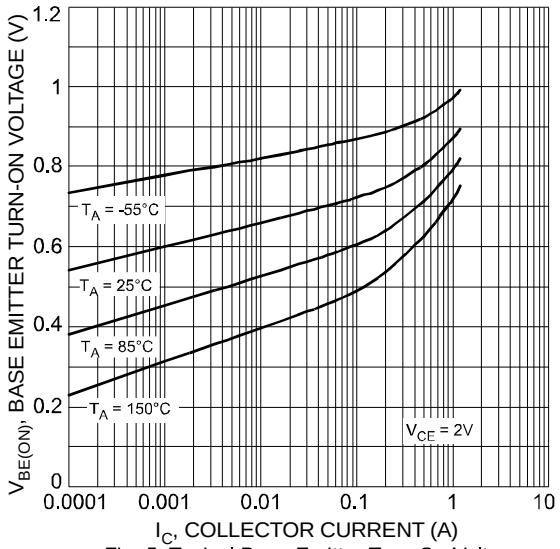


Fig. 5 Typical Base Emitter Turn-On Voltage
vs. Collector Current

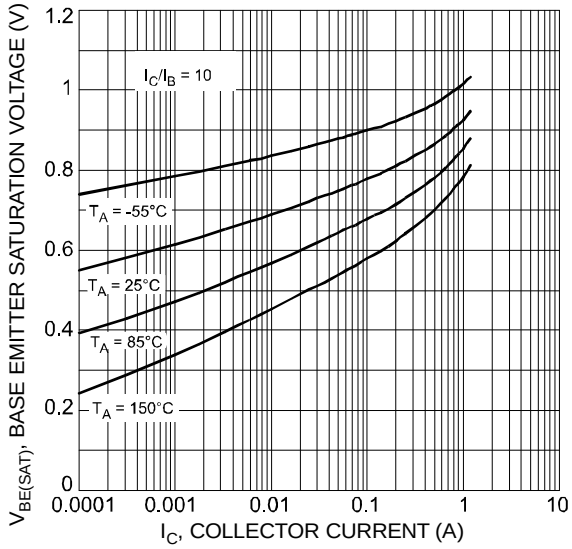


Fig. 6 Typical Base Emitter Saturation Voltage
vs. Collector Current

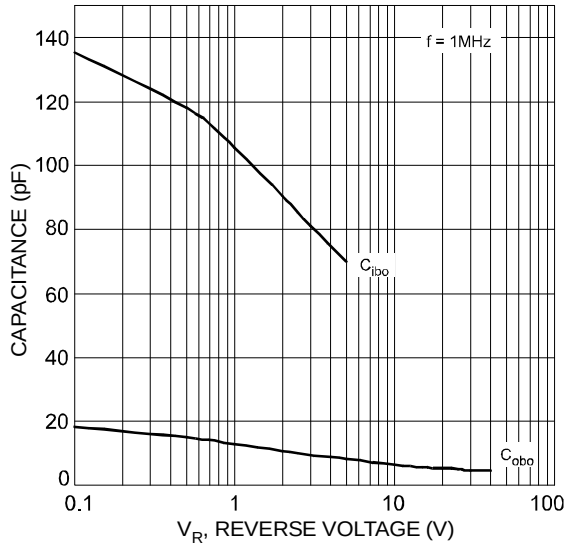


Fig. 7 Typical Capacitance Characteristics

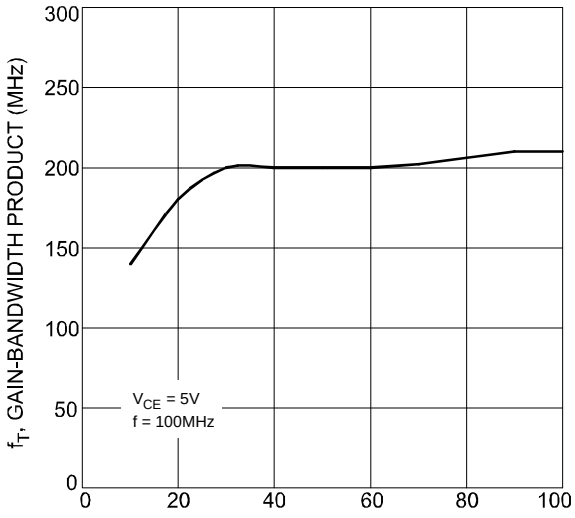


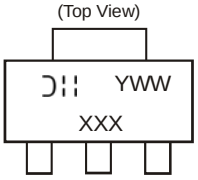
Fig. 8 Typical Gain-Bandwidth Product vs. Collector Current

Ordering Information (Note 5)

Device	Packaging	Shipping
DCP56-13	SOT-223	2500/Tape & Reel
DCP56-16-13	SOT-223	2500/Tape & Reel

Notes: 5. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

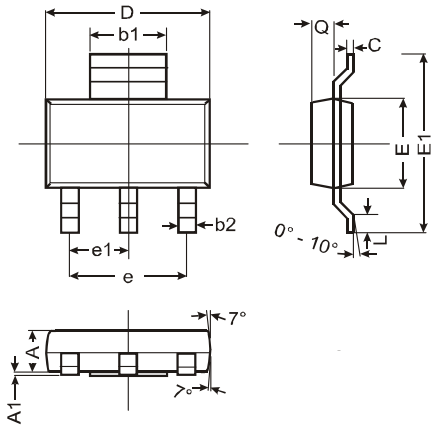
Marking Information



XXX = Product Type Marking Code ex. N18 = DCP56
N18-16 = DCP56-16

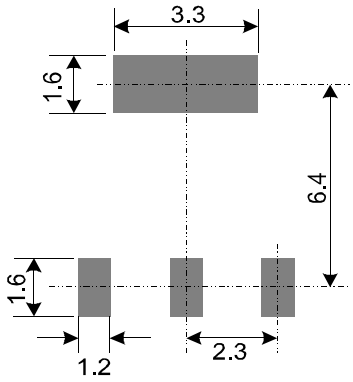
= Manufacturer's Marking Code
YWW = Date Code Marking
Y = Last Digit of Year ex: 7 = 2007
WW = Week Code 01-52

Package Outline Dimensions



SOT-223			
Dim	**Min**	**Max**	**Typ**
A	1.55	1.65	1.60
A1	0.010	0.15	0.05
b1	2.90	3.10	3.00
b2	0.60	0.80	0.70
C	0.20	0.30	0.25
D	6.45	6.55	6.50
E	3.45	3.55	3.50
E1	6.90	7.10	7.00
e	—	—	4.60
e1	—	—	2.30
L	0.85	1.05	0.95
Q	0.84	0.94	0.89
All Dimensions in mm			

Suggested Pad Layout: (Based on IPC-SM-782)



(Unit: mm)

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Bipolar Transistors - BJT ***category:***

Click to view products by Diodes Incorporated ***manufacturer:***

Other Similar products are found below :

619691C MCH4017-TL-H BC546/116 BC557/116 BSW67A NTE187A NTE195A NTE2302 NTE2330 NTE63 C4460 2SA1419T-TD-H 2SA1721-O(TE85L,F) 2SA2126-E 2SB1204S-TL-E 2SC5488A-TL-H 2SD2150T100R SP000011176 2N2369ADCSM 2SC2412KT146S 2SC5490A-TL-H 2SD1816S-TL-E 2SD1816T-TL-E CMXT2207 TR CPH6501-TL-E MCH4021-TL-E US6T6TR 732314D CMXT3906 TR CPH3121-TL-E CPH6021-TL-H 873787E UMX21NTR EMT2T2R MCH6102-TL-E FP204-TL-E NJL0302DG 2N3583 2N3879 2SA1434-TB-E 2SC3143-4-TB-E 2SD1621S-TD-E 30A02MH-TL-E NSV40301MZ4T1G NTE13 NTE15 NTE16001 NTE16006 NTE26 NTE320