

New Jersey Semi-Conductor Products, Inc.

20 STERN AVE.
SPRINGFIELD, NEW JERSEY 07081
U.S.A.

D43C Series

-30 - -80 VOLTS
-3 AMP, 12.5 WATTS

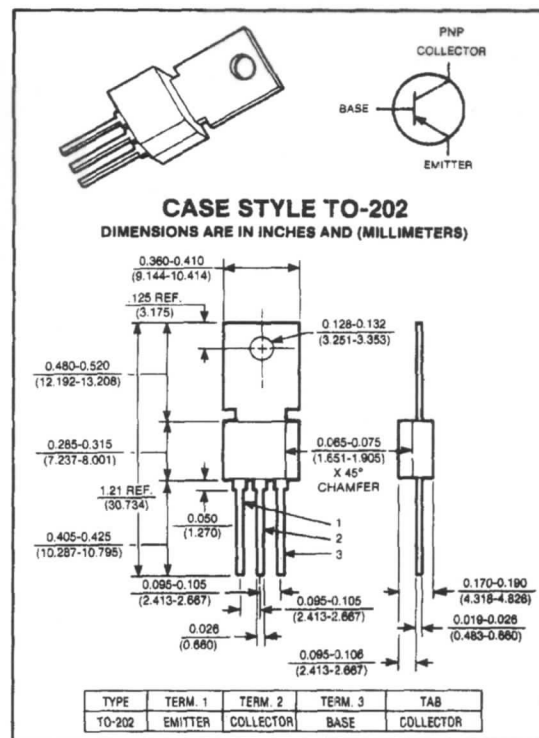
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PNP POWER TRANSISTORS

COMPLEMENTARY TO THE D42C SERIES

Features:

- High free-air power dissipation
- PNP complement to D42C NPN
- Low collector saturation voltage (0.5V typ. @ 3.0A I_C)
- Excellent linearity
- Fast Switching



maximum ratings ($T_A = 25^\circ\text{C}$) (unless otherwise specified)

RATING	SYMBOL	D43C1, 2, 3	D43C4, 5, 6	D43C7, 8, 9	D43C10, 11, 12	UNITS
Collector-Emitter Voltage	V_{CEO}	-30	-45	-60	-80	Volts
Collector-Emitter Voltage	V_{CES}	-40	-55	-70	-90	Volts
Emitter Base Voltage	V_{EBO}	-5	-5	-5	-5	Volts
Collector Current — Continuous	I_C	-3	-3	-3	-3	A
Peak ⁽¹⁾	I_{CM}	-5	-5	-5	-5	A
Base Current — Continuous	I_B	-2	-2	-2	-2	A
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ @ $T_C = 25^\circ\text{C}$	P_D	2.1 12.5	2.1 12.5	2.1 12.5	2.1 12.5	Watts
Operating and Storage Junction Temperature Range	T_J, T_{stg}	-55 to +150	-55 to +150	-55 to +150	-55 to +150	$^\circ\text{C}$

thermal characteristics

Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	60	60	60	60	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	10	10	10	10	$^\circ\text{C/W}$
Maximum Lead Temperature for Soldering Purposes: 1/8" from Case for 5 Seconds	T_L	+260	+260	+260	+260	$^\circ\text{C}$

(1) Pulse Test Pulse Width = 300ms Duty Cycle $\leq 2\%$.



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Quality Semi-Conductors

electrical characteristics ($T_C = 25^\circ\text{C}$) (unless otherwise specified)

CHARACTERISTIC	SYMBOL	MIN	TYP	MAX	UNIT
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off characteristics⁽¹⁾

Collector-Emitter Sustaining Voltage ($I_C = 100\text{mA}$)	D43C1, 2, 3 D43C4, 5, 6 D43C7, 8, 9 D43C10, 11, 12	$V_{CEO(sus)}$	-30 -45 -60 -80	— — — —	— — — —	Volts
Collector Cutoff Current ($V_{CE} = \text{Rated } V_{CES}$)		I_{CES}	—	—	-10	μA
Emitter Cutoff Current ($V_{EB} = 5\text{V}$)		I_{EBO}	—	—	-100	μA

second breakdown

Second Breakdown with Base Forward Biased	FBSOA	SEE FIGURE 3
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on characteristics

DC Current Gain ($I_C = -200\text{mA}$, $V_{CE} = -1\text{V}$)	D43C1, 4, 7, 10 D43C2, 5, 8, 11 D43C3, 6, 9, 12	h_{FE}	25 40 40	— — —	— 120 120	—
($I_C = -1\text{A}$, $V_{CE} = -1\text{V}$)	D43C1, 4, 7, 10 D43C2, 5, 8, 11 D43C3, 6, 9, 12	h_{FE}	10 20 20	— — —	— — —	—
Collector-Emitter Saturation Voltage ($I_C = -1\text{A}$, $I_B = -50\text{mA}$)	D43C2, 5, 8, 11 D43C3, 6, 9, 12	$V_{CE(sat)}$	— —	— —	-0.5 -0.5	Volts
($I_C = -1\text{A}$, $I_B = -100\text{mA}$)	D43C1, 4, 7, 10	$V_{CE(sat)}$	—	—	-0.5	Volts
Base-Emitter Saturation Voltage ($I_C = -1\text{A}$, $I_B = -100\text{mA}$)		$V_{BE(sat)}$	—	—	-1.3	Volts

dynamic characteristics

Collector Capacitance ($V_{CB} = -10\text{V}$, $f = 1\text{MHz}$)	C_{CBO}	—	—	125	pF
Current-Gain — Bandwidth Product ($I_C = -20\text{mA}$, $V_{CE} = -4\text{V}$)	f_T	—	40	—	MHz

switching characteristics

Switching Characteristics						
Resistive Load						
Delay Time + Rise Time	$I_C = -1A, I_{B1} = I_{B2} = -0.1A$ $V_{CC} = 30V, t_p = 25 \mu sec$	$t_d + t_r$	—	50	—	nS
Storage Time		t_s	—	500	—	
Fall Time		t_f	—	50	—	

(1) Pulse Test PW = 300ms Duty Cycle $\leq 2\%$.