



SURFACE-MOUNT PNP POWER DARLINGTON TRANSISTORS

D73FY4D1,2

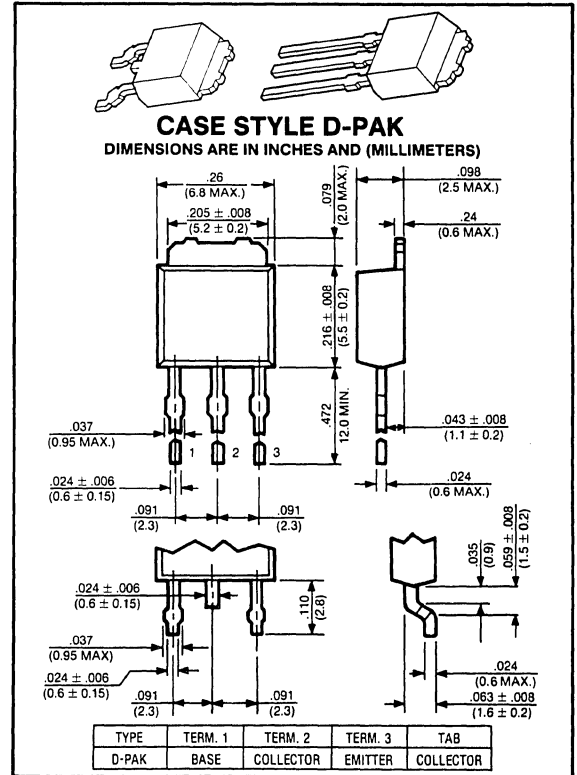
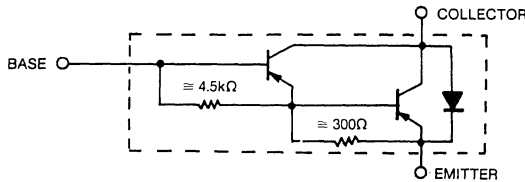
**-80 VOLTS
-4 AMP, 15 WATTS**

Designed for switching applications, hammer drive, pulse motor drive applications, power amplifier applications.

Features:

- High DC Current Gain
: $hFE(1) = 2000$ (Min.) ($V_{CE} = -2V$, $I_C = -1A$)
- Low Saturation Voltage
: $V_{CE(sat)} = -1.5$ (Max.) ($I_C = 3A$)
- Complementary to D72FY4D1
- Suffix "2" designates lead formed version
- See page 840 for mounting and handling considerations.

EQUIVALENT CIRCUIT



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

RATING	SYMBOL	D73FY4D1,2	UNITS
Collector-Emitter Voltage	V_{CEO}	-80	Volts
Collector-Base Voltage	V_{CBO}	-100	Volts
Emitter Base Voltage	V_{EBO}	-5	Volts
Collector Current — Continuous	I_C	-4	A
Base Current — Continuous	I_B	-0.4	A
Total Power Dissipation @ $T_A = 25^\circ C$ @ $T_C = 25^\circ C$	P_D	1.0 15	Watts
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ C$

thermal characteristics⁽¹⁾

Maximum Lead Temperature for Soldering Purposes: 1/8" from Case for 5 Seconds	T_L	235	$^\circ C$
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(1) See page 841 for thermal considerations.

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

CHARACTERISTIC	SYMBOL	MIN	TYP	MAX	UNIT
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off characteristics

Collector-Emitter Breakdown Voltage ($I_C = -10\text{mA}$, $I_B = 0$)	$V_{(BR)CEO}$	-80	—	—	Volts
Collector Cutoff Current ($V_{CB} = -100\text{V}$, $I_E = 0$)	I_{CBO}	—	—	-20	μA
Emitter Cutoff Current ($V_{EB} = -5\text{V}$, $I_C = 0$)	I_{EBO}	—	—	-2.5	mA

second breakdown

Second Breakdown with Base Forward Biased	FBSOA	SEE FIGURE 9
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on characteristics

DC Current Gain ⁽²⁾ ($I_C = -1\text{A}$, $V_{CE} = -2\text{V}$) ($I_C = -3\text{A}$, $V_{CE} = -2\text{V}$)	h_{FE}	2000	—	—	—
	h_{FE}	1000	—	—	—
Collector-Emitter Saturation Voltage ($I_C = -3\text{A}$, $I_B = -6\text{mA}$)	$V_{CE(sat)}$	—	—	-1.5	V
Base-Emitter Saturation Voltage ($I_C = -3\text{A}$, $I_B = -6\text{mA}$)	$V_{BE(sat)}$	—	—	-2.0	Volts

switching characteristics

Turn-on Time	$V_{CC} = -30\text{V}$ $-I_{B1} = I_{B2} = 6\text{mA}$ Duty Cycle $\leq 1\%$	t_{on}	—	0.15	—	μs
Storage Time		t_{stg}	—	0.80	—	
Fall Time		t_f	—	0.40	—	

(2) See page 43 for h_{FE} ranges.

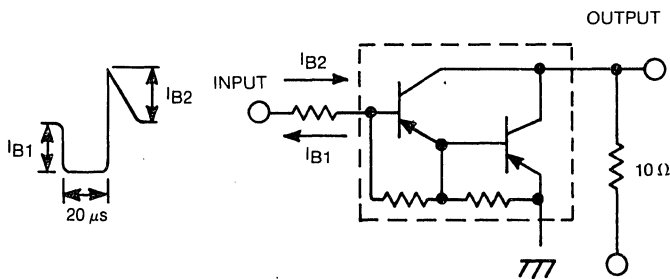


FIG. 1 SWITCHING TIME TEST CIRCUIT

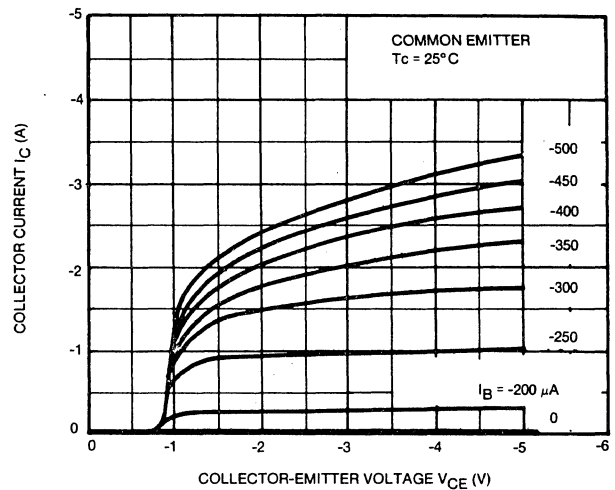


FIG. 2 $I_C - V_{CE}$

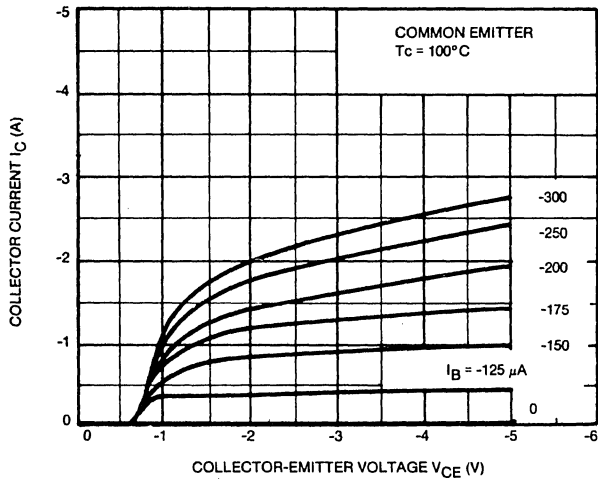


FIG. 3 I_C - V_{CE}

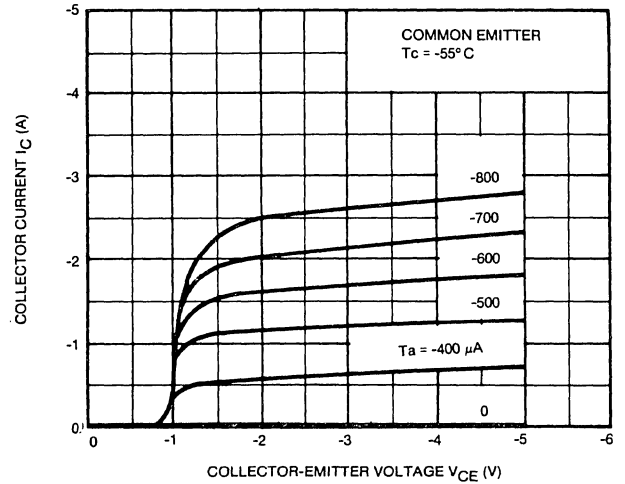


FIG. 4 I_C - V_{CE}

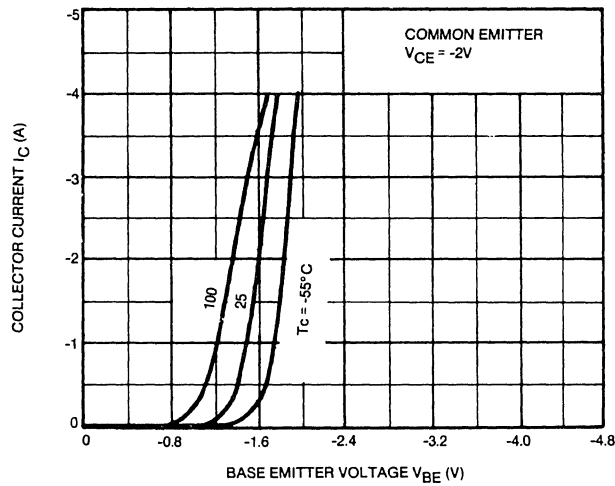


FIG. 5 I_C - V_{BE}

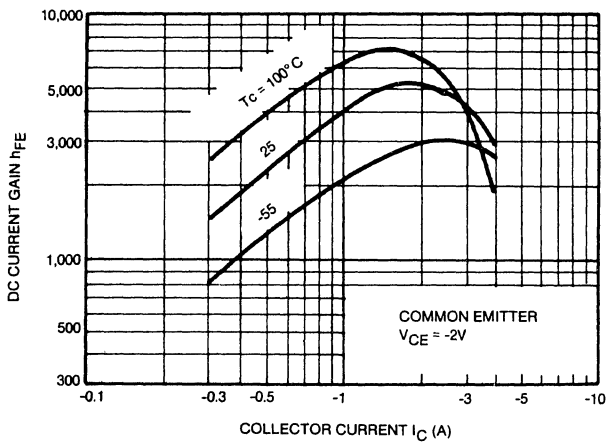


FIG. 6 h_{FE} - I_C

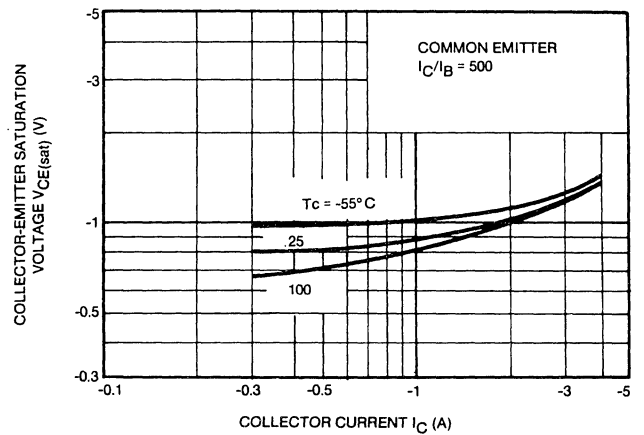


FIG. 7 V_{CE(sat)} - I_C

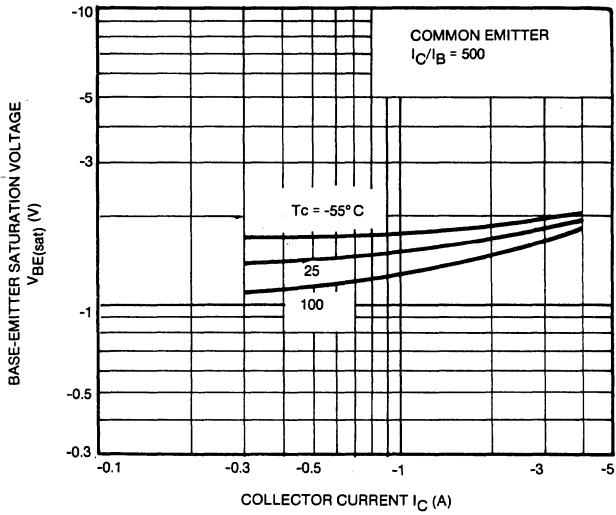


FIG. 8 $V_{BE(sat)} - I_C$

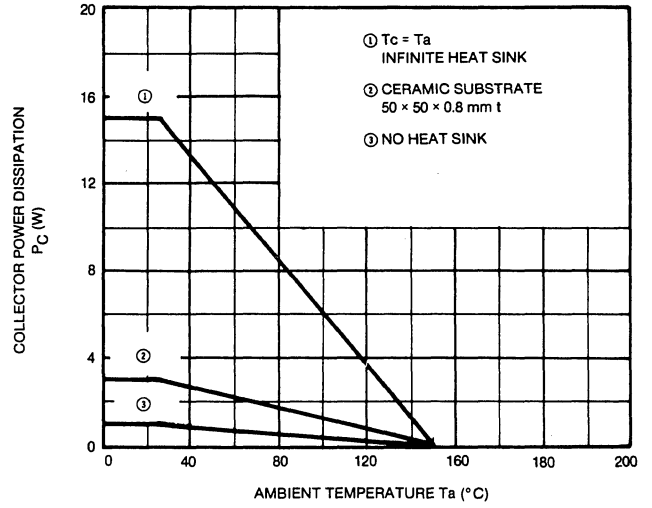


FIG. 9 $P_C - T_a$

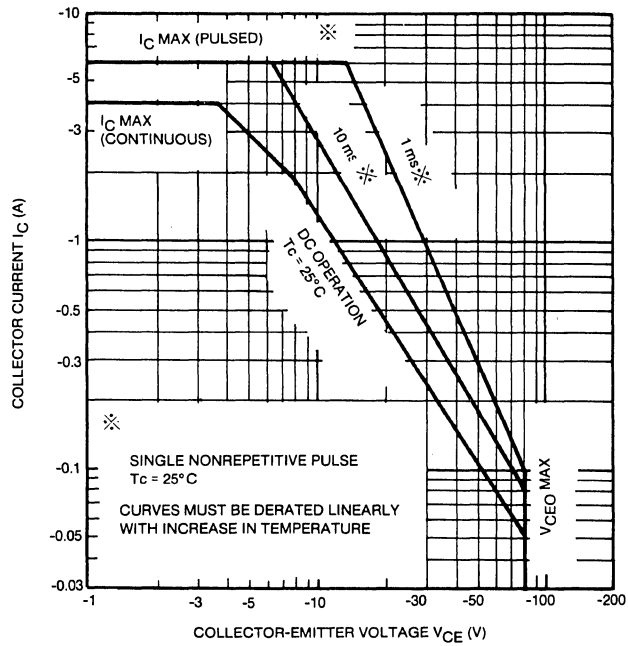


FIG. 10 SAFE OPERATING AREA