SURFACE-MOUNT
PNP POWER TRANSISTORS

D71F2T1

-50 VOLTS
-2 AMP, 500mWATTS

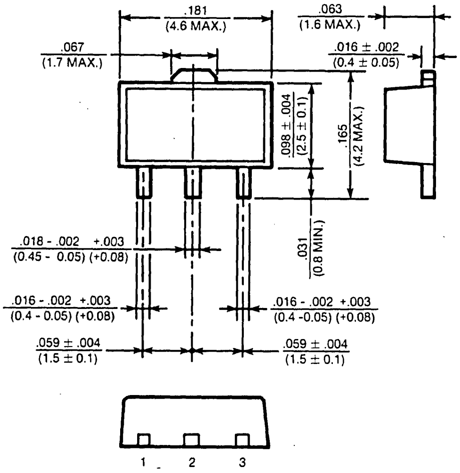
Designed for power amplifier applications, power switching applications.

Features:

- Low saturation voltage
  : $V_{CE(sat)} = -0.5V$ (Max.) ($I_C = -1A$)
- High speed switching time: $t_{stg} = 1.0\mu s$ (Typ.)
- $P_D = 1 \sim 2W$ (Mounted on ceramic substrate)
- Small flat package
- Complementary to D70F2T1
- See page 840 for mounting and handling considerations.

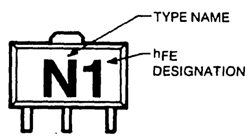
CASE STYLE SOT-89

DIMENSIONS ARE IN INCHES AND (MILLIMETERS)



TYPE	TERM. 1	TERM. 2	TERM. 3	TAB
SOT-89	BASE	COLLECTOR	EMITTER	COLLECTOR

MARKING SYSTEM



h_{FE} DESIGNATION
1) 70-240
2) 70-140
3) 120-240

maximum ratings ($T_A = 25°C$) (unless otherwise specified)

RATING	SYMBOL	D71F2T	UNITS
Collector-Emitter Voltage	V_{CEO}	-50	Volts
Collector-Base Voltage	V_{CBO}	-50	Volts
Emitter Base Voltage	V_{EBO}	-5	Volts
Collector Current — Continuous	I_C	-2	A
Base Current — Continuous	I_B	-0.4	A
Total Power Dissipation @ $T_C = 25°C$ @ $T_C = 25°C^{(1)}$	P_D	500 1000	mWatts
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-55 to +150	°C

thermal characteristics$^{(2)}$

(1) Mounted on ceramic substrate (250mm² × 0.8t).
(2) See page 841 for thermal considerations.

electrical characteristics (T_A = 25° C) (unless otherwise specified)

off characteristics

CHARACTERISTIC	SYMBOL	MIN	TYP	MAX	UNIT
Collector-Emitter Breakdown Voltage (I_C = -10mA, I_E = 0)	$V_{(BR)CEO}$	-50	—	—	Volts
Collector Cutoff Current (V_{CB} = -50V, I_E = 0)	I_{CBO}	—	—	-0.1	µA
Emitter Cutoff Current (V_{EB} = -5V, I_C = 0)	I_{EBO}	—	—	-0.1	µA

on characteristics

CHARACTERISTIC	SYMBOL	MIN	TYP	MAX	UNIT
DC Current Gain(3) (I_C = -0.5A, V_{CE} = -2V)	h_{FE}	70	—	240	—
(I_C = -2.0A, V_{CE} = -2V)		20	—	—	
Collector-Emitter Saturation Voltage (I_C = -1A, I_B = -0.05A)	$V_{CE(sat)}$	—	—	-0.5	V
Base-Emitter Saturation Voltage (I_C = -1A, I_B = -0.05A)	$V_{BE(sat)}$	—	—	-1.2	Volts

switching characteristics

CHARACTERISTIC		SYMBOL	MIN	TYP	MAX	UNIT
Turn-on Time	V_{CC} = -30V	t_{on}	—	0.1	—	µs
Storage Time	I_{B1} = I_{B2} = 0.05A	t_{stg}	—	1.0	—	
Fall Time	Duty Cycle ≦ 1%	t_f	—	0.1	—	

(3) See page 44 for h_{FE} range

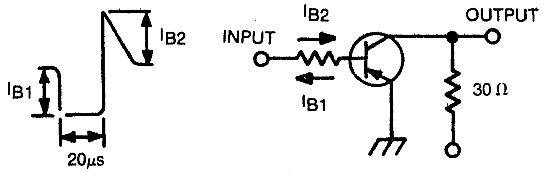


FIG. 1 SWITCHING TIME TEST CIRCUIT

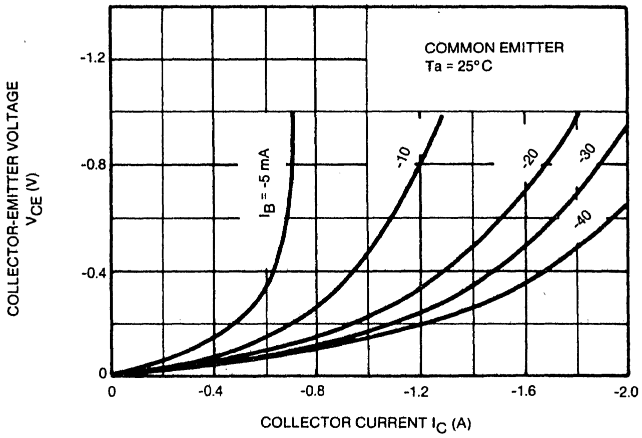


FIG. 2 V_{CE} - I_C

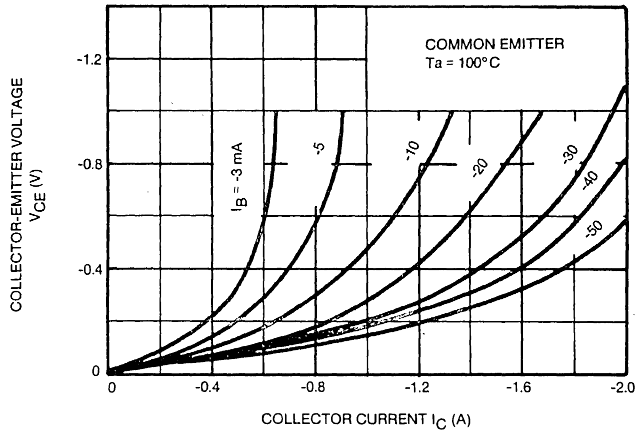


FIG. 3 V_{CE} - I_C

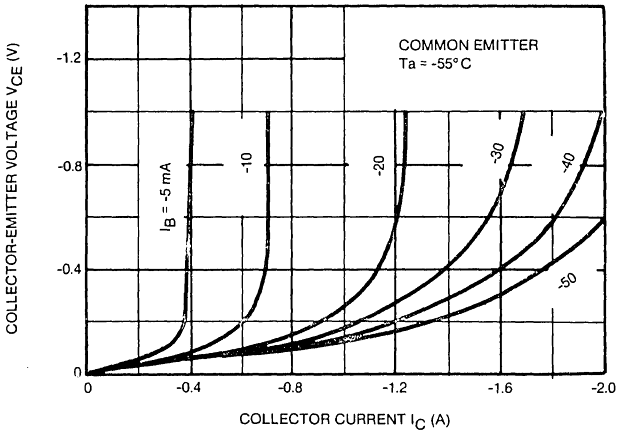


FIG. 4 V_{CE} - I_C

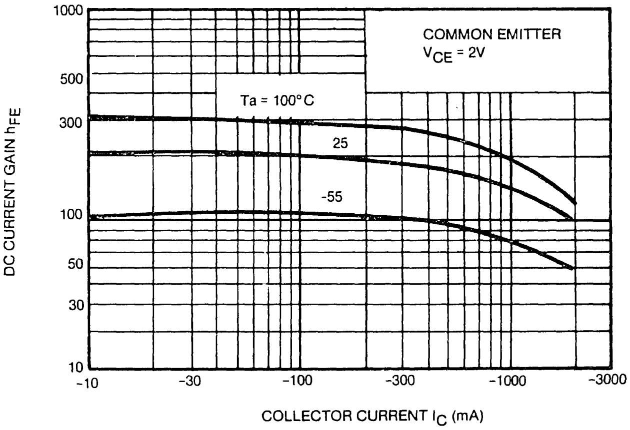


FIG. 5 h_{FE} - I_C

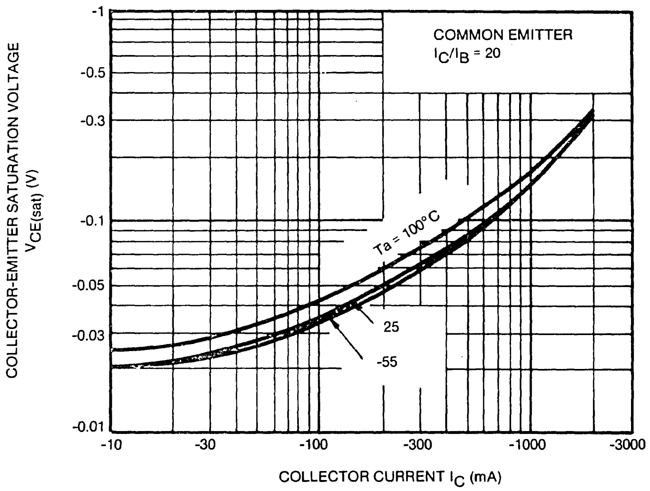


FIG. 6 $V_{CE(sat)}$ - I_C

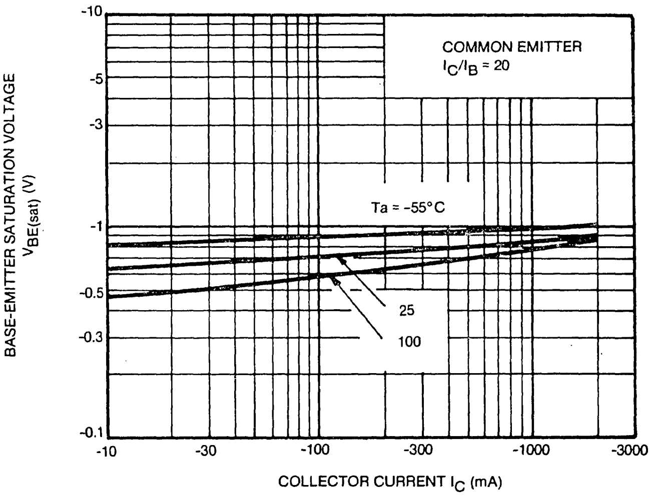


FIG. 7 $V_{BE(sat)}$ - I_C

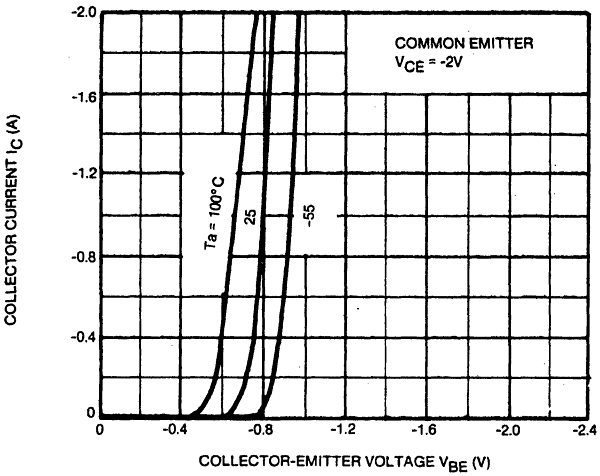


FIG. 8 I_C - V_{BE}

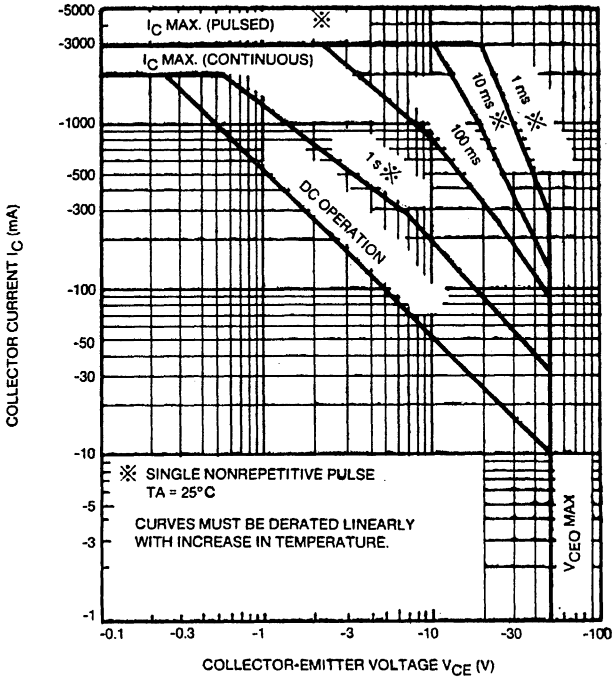


FIG. 9 SAFE OPERATING AREA

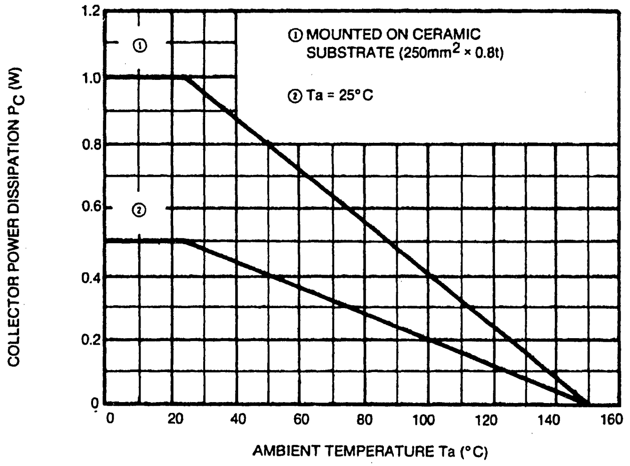


FIG. 10 P_C - Ta