

2SD1766

Transistor, NPN

Features

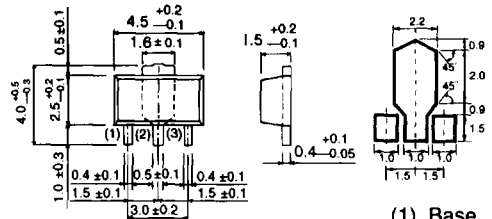
- available in MPT3 (MPT, SOT-89, SC-62) package
- package marking: 2SD1766; DB★, where ★ is h_{FE} code
- $P_C = 2\text{ W}$, when mounted on $40 \times 40 \times 0.7\text{ mm}$ ceramic substrate
- low collector saturation voltage, typically, $V_{CE(sat)} = 0.16\text{ V}$ for $I_C/I_B = 2\text{ A}/0.2\text{ A}$
- complementary pair with 2SB1188

Applications

- medium power amplifier

Dimensions (Units : mm)

2SD1766 (MPT3)



- (1) Base
- (2) Collector
- (3) Emitter

Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

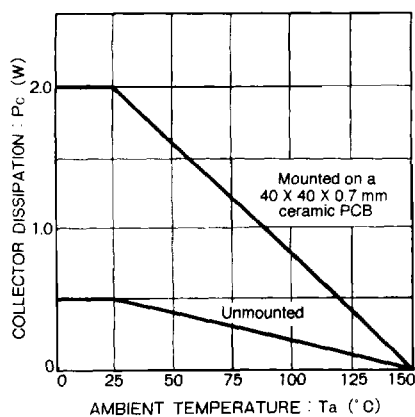
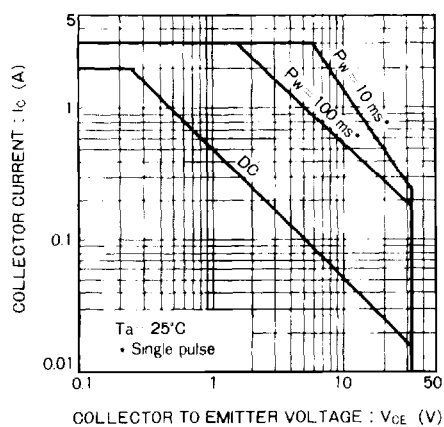
Parameter	Symbol	Limits	Unit	Conditions
Collector-to-base voltage	V_{CBO}	40	V	
Collector-to-emitter voltage	V_{CEO}	32	V	
Emitter-to-base voltage	V_{EBO}	5	V	
Collector current	I_C	2	A	$P_W = 20\text{ ms, duty} = 50\%$
		2.5		
Collector dissipation	P_C	0.5	W	Mounted on $40 \times 40 \times 0.7\text{ mm}$ ceramic PCB
		2		
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ\text{C}$	

Electrical characteristics (unless otherwise noted, $T_a = 25^\circ\text{C}$)

Parameter	Symbol	Min	Typical	Max	Unit	Conditions
Collector-to-base breakdown voltage	BV_{CBO}	40			V	$I_C = 50 \mu\text{A}$
Collector-to-emitter breakdown voltage	BV_{CEO}	32			V	$I_C = 1 \text{ mA}$
Emitter-to-base breakdown voltage	BV_{EBO}	5			V	$I_E = 50 \mu\text{A}$
Collector cutoff current	I_{CBO}			1	μA	$V_{CB} = 20 \text{ V}$
Emitter cutoff current	I_{EBO}			1	μA	$V_{EB} = 4 \text{ V}$
DC current gain	h_{FE}	82		390		$V_{CE} = 3 \text{ V}$, $I_C = 500 \text{ mA}$, single pulse
Collector-to-emitter saturation voltage	$V_{CE(sat)}$		0.5	0.8	V	$I_C/I_B = 2 \text{ A}/0.2 \text{ A}$, single pulse
Transition frequency	f_T		100		MHz	$V_{CE} = 5 \text{ V}$, $I_E = -50 \text{ mA}$, $f = 100 \text{ MHz}$, single pulse
Output capacitance	C_{ob}		30		pF	$V_{CB} = 10 \text{ V}$, $I_E = 0 \text{ A}$, $f = 1 \text{ MHz}$

 h_{FE} rankings

Item	P	Q	R
h_{FE}	82 ~ 180	120 ~ 270	180 ~ 390

Electrical characteristic curves

Figure 1

Figure 2

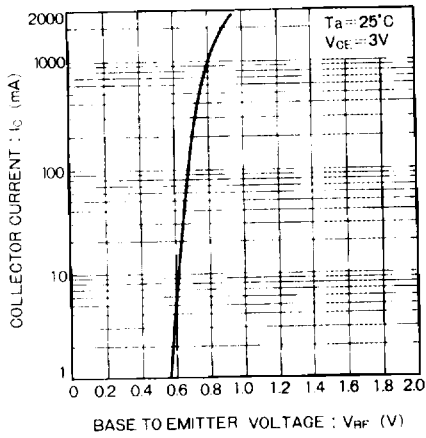


Figure 3

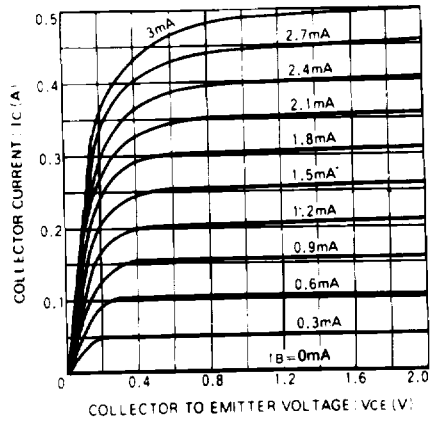


Figure 4

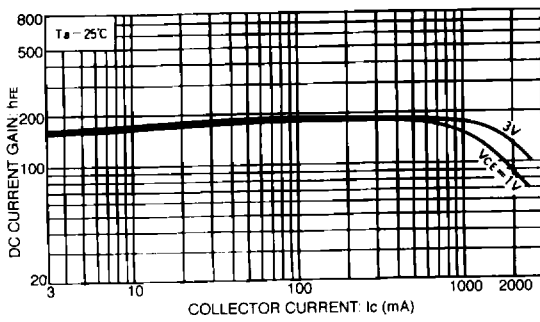


Figure 5

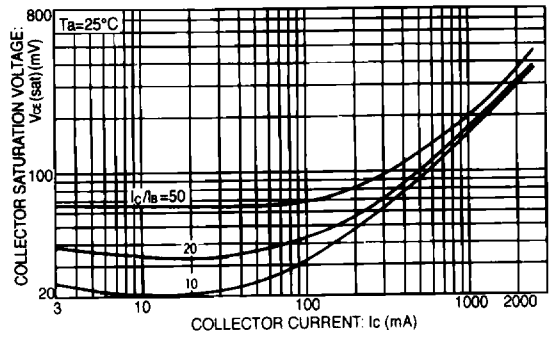


Figure 6

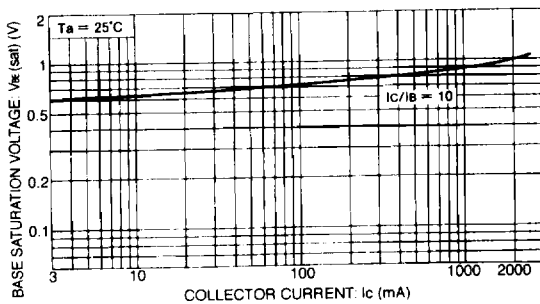


Figure 7

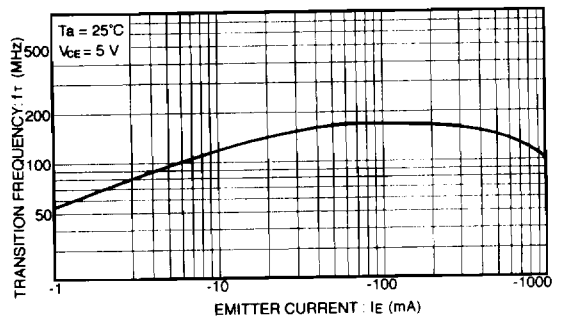


Figure 8

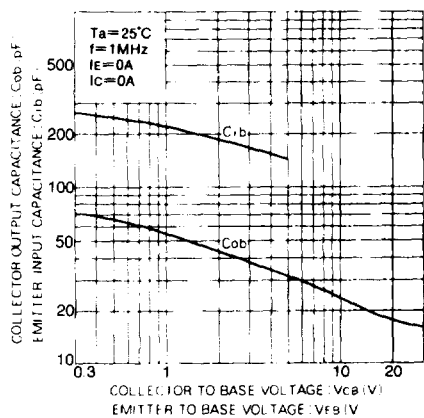


Figure 9

Ordering information

Package	Tape
Code	T100
Basic order quantity	1000
2SD1766	★
★ = Standard, ☆ = Semi-standard, * = Special order	