

2SD1889

Transistor, NPN, Darlington

Features

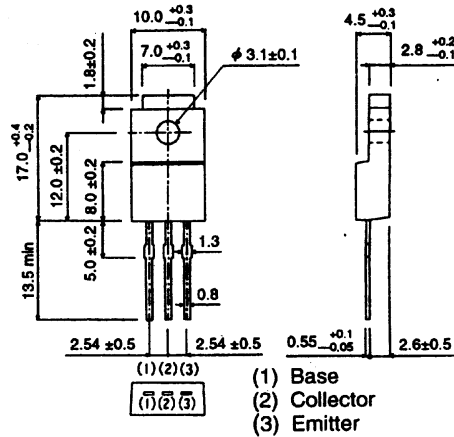
- available in TO-220FP (SC-67) package
- Darlington connection provides high dc current gain (h_{FE})
- damper diode is incorporated
- built-in resistors between base and emitter
- complementary pair with 2SB1340

Applications

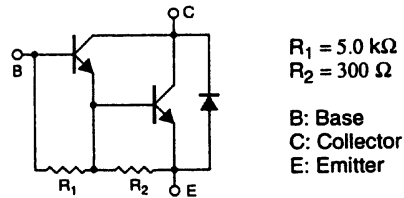
- low frequency power amplifier

Dimensions (Units : mm)

2SD1889 (TO-220FP)



Equivalent circuit



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

Parameter	Symbol	Limits	Unit	Conditions
Collector-to-base voltage	V_{CBO}	120	V	
Collector-to-emitter voltage	V_{CEO}	120	V	
Emitter-to-base voltage	V_{EBO}	6	V	
Collector current	I_C	6	A	Continuous (dc)
		10	A	Single pulse, $P_W = 100 \text{ ms}$
Collector dissipation	P_C	2	W	$T_a = 25^\circ\text{C}$
		30	W	$T_C = 25^\circ\text{C}$
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$	

ROHM

2SD1889 Transistor, NPN, 2SD series

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}	120			V	$I_C = 50 \mu\text{A}$
Collector-to-emitter breakdown voltage	BV_{CEO}	120			V	$I_C = 5 \text{ mA}$
Collector cutoff current	I_{CBO}			100	μA	$V_{CB} = 120 \text{ V}$
Emitter cutoff current	I_{EBO}			3	mA	$V_{EB} = 5 \text{ V}$
DC current gain	h_{FE}	2000		20000		$V_{CE} = 3 \text{ V}$, $I_C = 2 \text{ A}$, single pulse
Collector-to-emitter saturation voltage	$V_{CE(sat)}$			1.5	V	$I_C/I_B = 3 \text{ A/6 mA}$, single pulse
Transition frequency	f_T		40		MHz	$V_{CE} = 5 \text{ V}$, $I_E = -0.2 \text{ A}$, $f = 10 \text{ MHz}$
Output capacitance	C_{ob}		50		pF	$V_{CB} = 10 \text{ V}$, $I_E = 0 \text{ A}$, $f = 1 \text{ MHz}$, characteristics of built-in transistors

Electrical characteristic curves

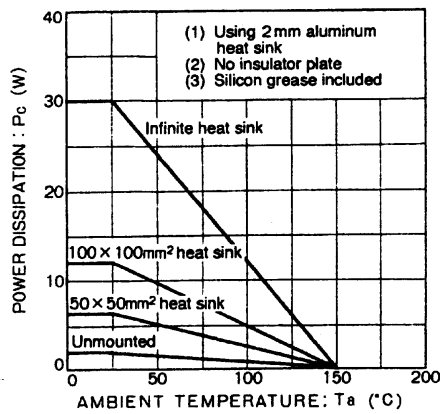


Figure 1

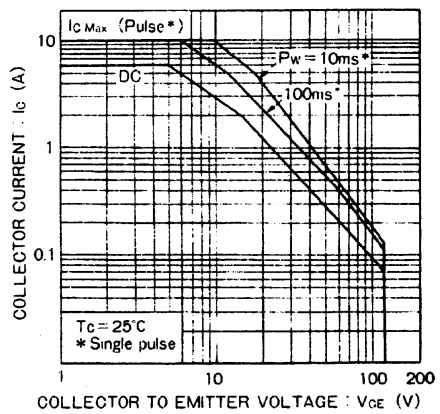


Figure 2

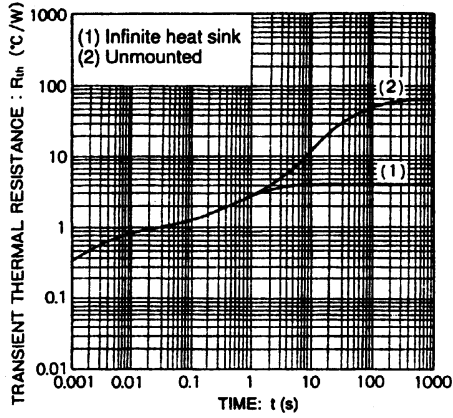


Figure 3

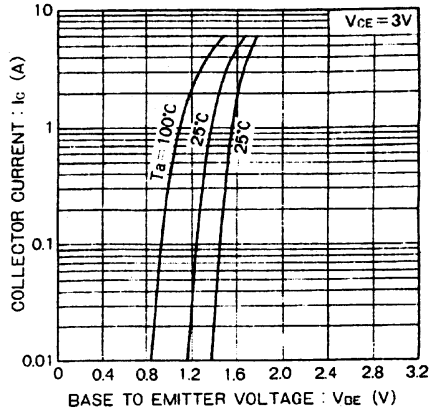


Figure 4

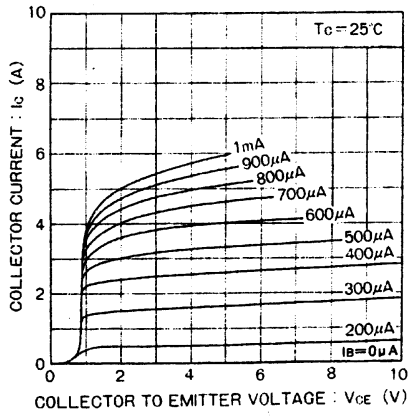


Figure 5

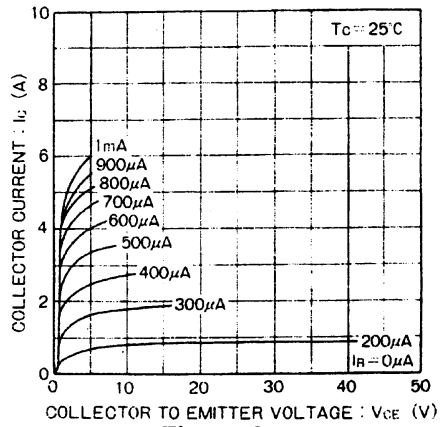


Figure 6

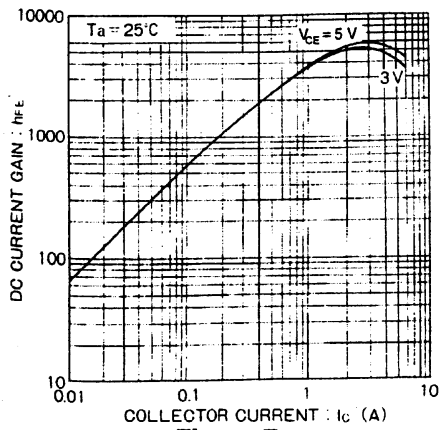


Figure 7

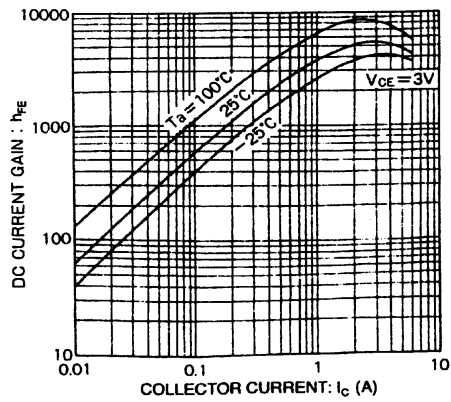


Figure 8

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