

2SD1606

Silicon NPN Triple Diffused

HITACHI

ADE-208-915 (Z)

1st. Edition

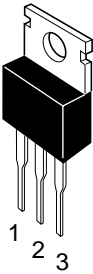
Sep. 2000

Application

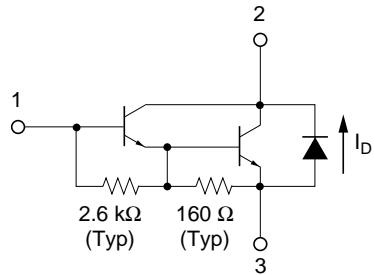
Low frequency power amplifier

Outline

TO-220AB



1. Base
2. Collector (Flange)
3. Emitter



Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Item	Symbol	Ratings	Unit
Collector to base voltage	V_{CBO}	120	V
Collector to emitter voltage	V_{CEO}	120	V
Emitter to base voltage	V_{EBO}	7	V
Collector current	I_{C}	6	A
Collector peak current	$I_{\text{C(peak)}}$	12	A
Collector power dissipation	P_{C}^{*1}	40	W
Junction temperature	T_{j}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$
C to E diode forward current	I_{D}^{*1}	6	A

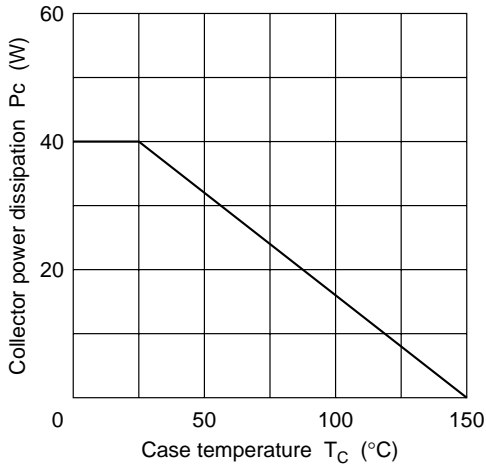
Note: 1. Value at $T_{\text{C}} = 25^\circ\text{C}$.

Electrical Characteristics ($T_a = 25^\circ\text{C}$)

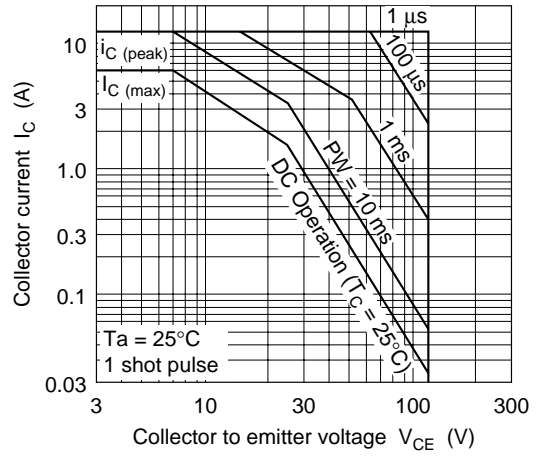
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Collector to emitter breakdown voltage	$V_{(\text{BR})\text{CEO}}$	120	—	—	V	$I_{\text{C}} = 25 \text{ mA}$, $R_{\text{BE}} = \infty$
Emitter to base breakdown voltage	$V_{(\text{BR})\text{EBO}}$	7	—	—	V	$I_{\text{E}} = 50 \text{ mA}$, $I_{\text{C}} = 0$
Collector cutoff current	I_{CBO}	—	—	100	μA	$V_{\text{CB}} = 120 \text{ V}$, $I_{\text{E}} = 0$
	I_{CEO}	—	—	10	μA	$V_{\text{CE}} = 100 \text{ V}$, $R_{\text{BE}} = \infty$
DC current transfer ratio	h_{FE}	1000	—	20000		$V_{\text{CE}} = 3 \text{ V}$, $I_{\text{C}} = 3 \text{ A}^{*1}$
Collector to emitter saturation voltage	$V_{\text{CE(sat)1}}$	—	—	1.5	V	$I_{\text{C}} = 3 \text{ A}$, $I_{\text{B}} = 6 \text{ mA}^{*1}$
	$V_{\text{CE(sat)2}}$	—	—	3.0	V	$I_{\text{C}} = 6 \text{ A}$, $I_{\text{B}} = 60 \text{ mA}^{*1}$
Base to emitter saturation voltage	$V_{\text{BE(sat)1}}$	—	—	2.0	V	$I_{\text{C}} = 3 \text{ A}$, $I_{\text{B}} = 6 \text{ mA}^{*1}$
	$V_{\text{BE(sat)2}}$	—	—	3.5	V	$I_{\text{C}} = 6 \text{ A}$, $I_{\text{B}} = 60 \text{ mA}^{*1}$
C to E diode forward voltage	V_{D}	—	—	3.0	V	$I_{\text{D}} = 6 \text{ A}^{*1}$
Turn on time	t_{on}	—	0.6	—	μs	$I_{\text{C}} = 3 \text{ A}$, $I_{\text{B1}} = -I_{\text{B2}} = 6 \text{ mA}$
Storage time	t_{stg}	—	7.0	—	μs	
Fall time	t_{f}	—	2.0	—	μs	

Note: 1. Pulse test.

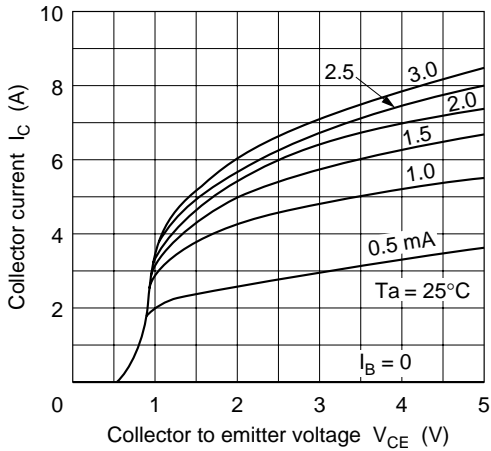
Maximum Collector Dissipation Curve



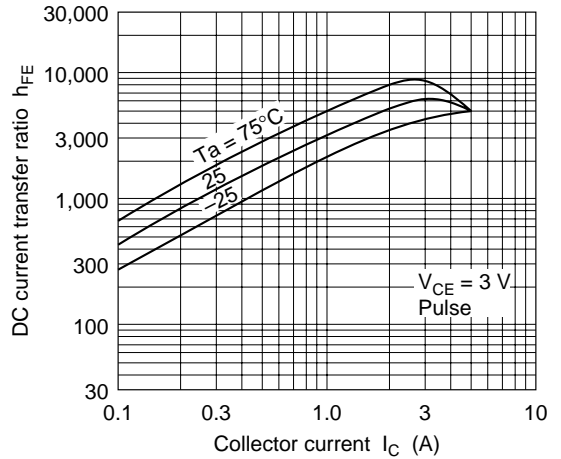
Area of Safe Operation

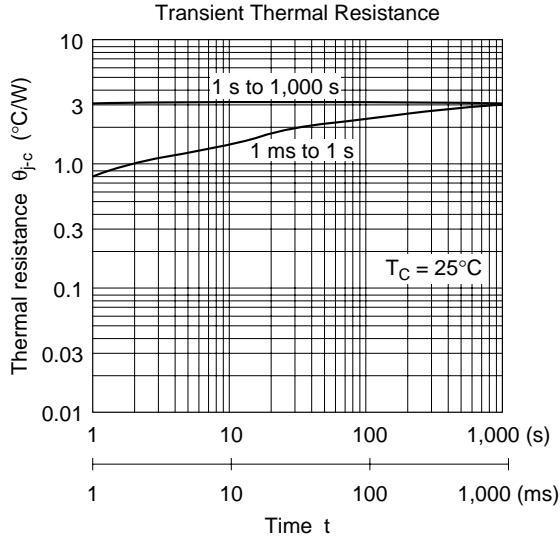
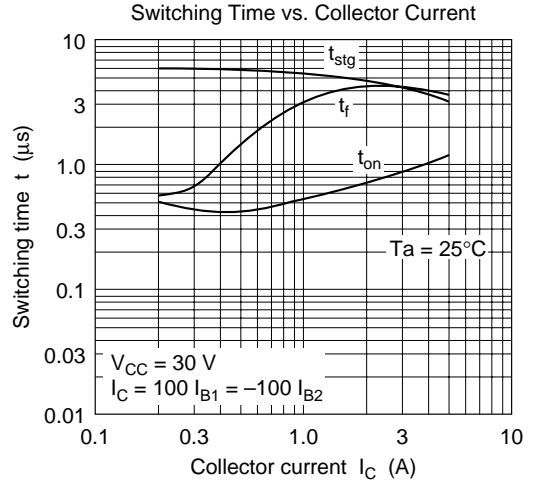
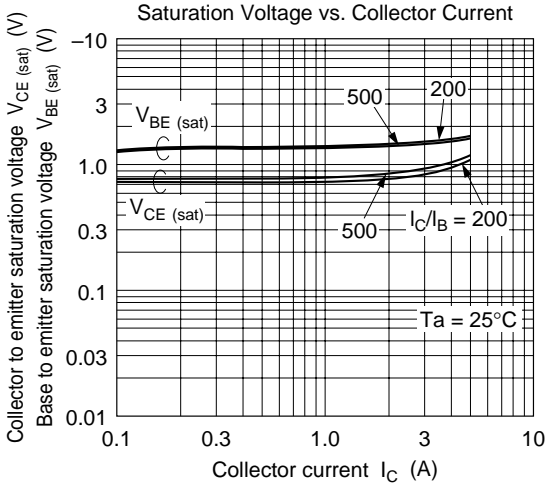


Typical Output Characteristics



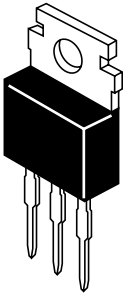
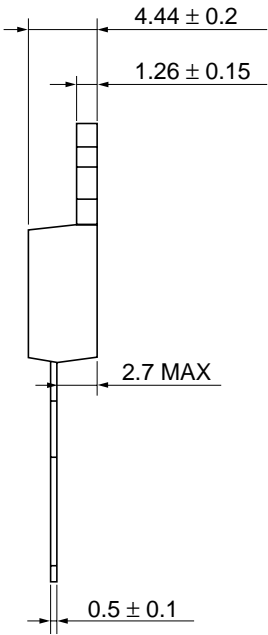
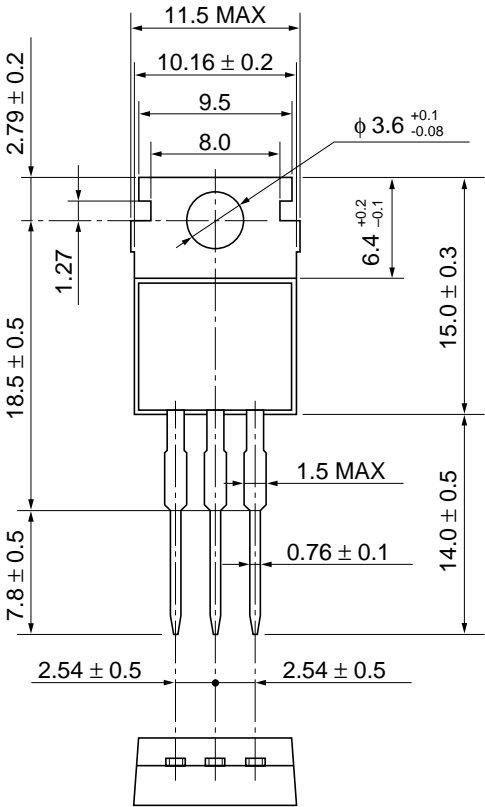
DC Current Transfer Ratio vs. Collector Current





Package Dimensions

Unit: mm



Hitachi Code	TO-220AB
JEDEC	Conforms
EIAJ	Conforms
Mass (reference value)	1.8 g

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