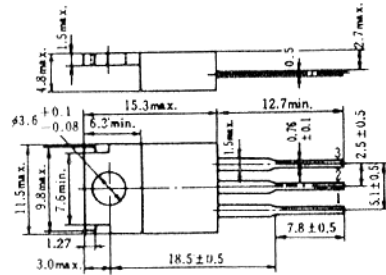


2SD1603, 2SD1604

SILICON NPN TRIPLE DIFFUSED

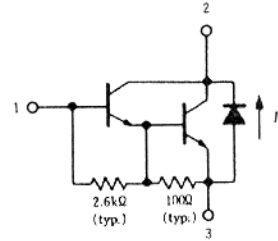
LOW FREQUENCY POWER AMPLIFIER

COMPLEMENTARY PAIR WITH 2SB1103 AND 2SB1104



1. Base
 2. Collector (Flange)
 3. Emitter
- (Dimensions in mm)

(JEDEC TO-220 AB)

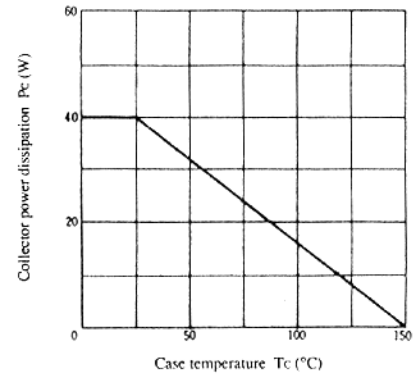


■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Item	Symbol	2SD1603	2SD1604	Unit
Collector to base voltage	V _{CB0}	60	80	V
Collector to emitter voltage	V _{CE0}	60	80	V
Emitter to base voltage	V _{EB0}	7	7	V
Collector current	I _C	8	8	A
Collector peak current	i _{C(peak)}	12	12	A
Collector power dissipation	P _C *	40	40	W
Junction temperature	T _j	150	150	°C
Storage temperature	T _{stg}	-55 to +150	-55 to +150	°C
C to E diode forward current	I _D *	8	8	A

* Value at T_C = 25°C.

MAXIMUM COLLECTOR DISSIPATION CURVE

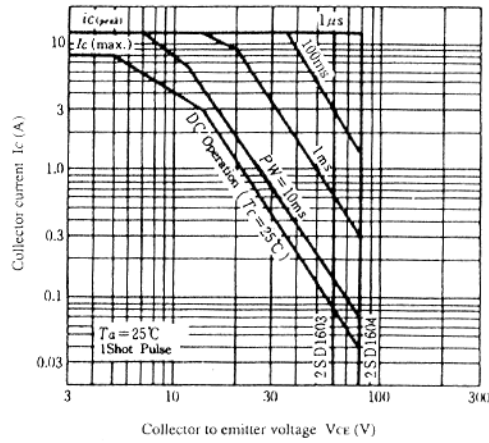


■ ELECTRICAL CHARACTERISTICS (Ta=25°C)

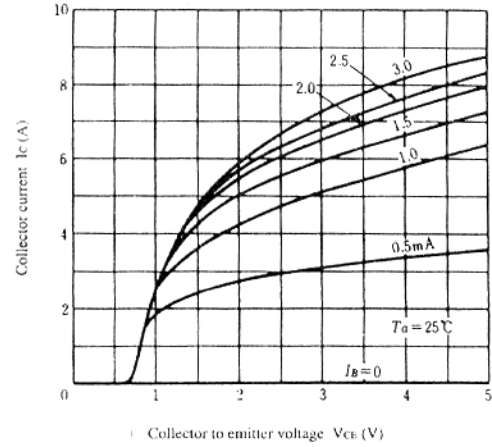
Item	Symbol	Test Condition	2SD1603			2SD1604			Unit
			min.	typ.	max.	min.	typ.	max.	
Collector to emitter breakdown voltage	V _{(BR)CEO}	I _C = 25mA, R _{BE} = ∞	60	—	—	80	—	—	V
Emitter to base breakdown voltage	V _{(BR)EBO}	I _E = 50mA, I _C = 0	7	—	—	7	—	—	V
Collector cutoff current	I _{CBO}	V _{CB} = 60V, I _E = 0	—	—	100	—	—	100	μA
	I _{CEO}	V _{CB} = 50V, R _{BE} = ∞	—	—	10	—	—	10	μA
DC current transfer ratio	h _{FE}	V _{CE} = 3V, I _C = 4A*	1000	—	20000	1000	—	20000	
Collector to emitter saturation voltage	V _{CE(sat)1}	I _C = 4A, I _B = 8mA*	—	—	1.5	—	—	1.5	V
	V _{CE(sat)2}	I _C = 8A, I _B = 80mA*	—	—	3.0	—	—	3.0	V
Base to emitter saturation voltage	V _{BE(sat)1}	I _C = 4A, I _B = 8mA*	—	—	2.0	—	—	2.0	V
	V _{BE(sat)2}	I _C = 8A, I _B = 80mA*	—	—	3.5	—	—	3.5	V
C to E diode forward voltage	V _D	I _D = 8A*	—	—	3.0	—	—	3.0	V
Turn on	t _{on}	I _C = 4A, I _{B1} = -I _{B2} = 8mA	—	0.5	—	—	0.5	—	μs
Storage time	t _{stg}		—	5.0	—	—	5.0	—	μs
Fall time	t _f		—	1.0	—	—	1.0	—	μs

* Pulse Test.

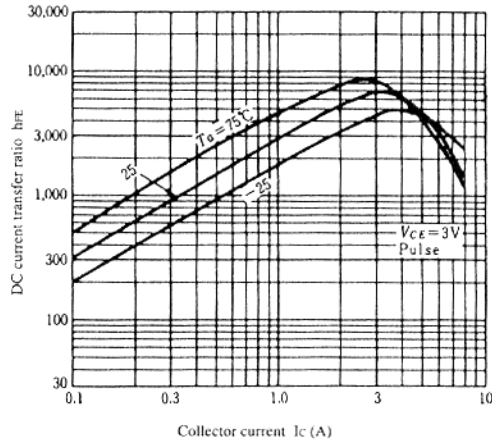
AREA OF SAFE OPERATION



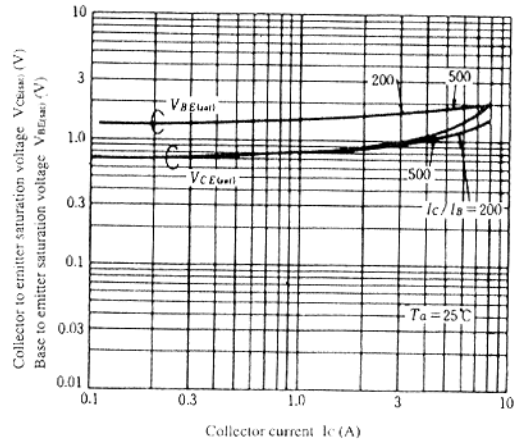
TYPICAL OUTPUT CHARACTERISTICS



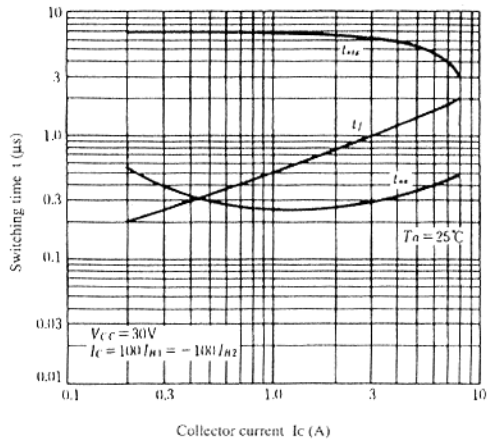
DC CURRENT TRANSFER RATIO VS. COLLECTOR CURRENT



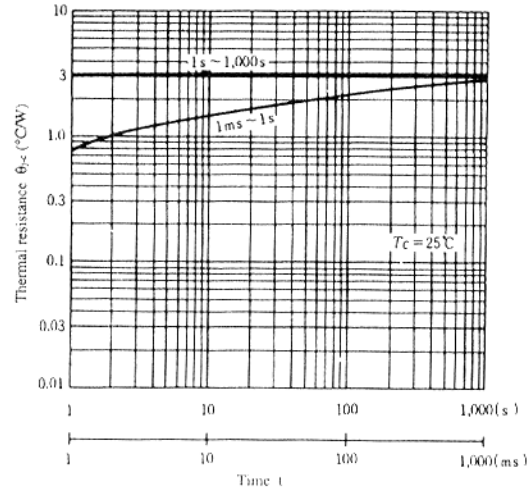
SATURATION VOLTAGE VS. COLLECTOR CURRENT



SWITCHING TIME VS. COLLECTOR CURRENT



TRANSIENT THERMAL RESISTANCE



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