

Features

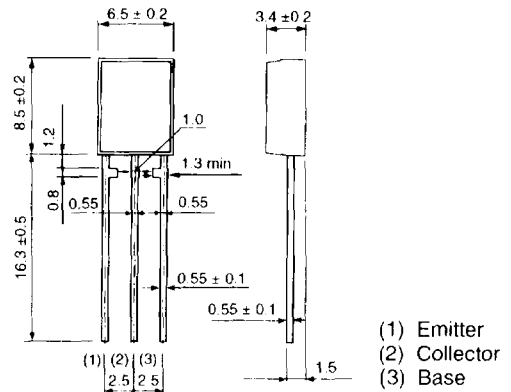
- available in MRT package
- built-in 60 V Zener diode between collector and base
- resistant to surges
- damper diode incorporated
- built-in resistors between base and emitter

Applications

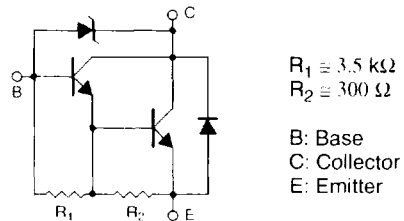
- low frequency power amplifier

Dimensions (Units : mm)

2SD2010 (MRT)



Equivalent circuit



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

Parameter	Symbol	Limits	Unit	Conditions
Collector-to-base voltage	V_{CBO}	60 ± 10	V	
Collector-to-emitter voltage	V_{CEO}	60 ± 10	V	
Emitter-to-base voltage	V_{EBO}	6	V	
Collector current	I_C	2	A	Continuous (dc)
		3	A	Single pulse, $P_W = 100 \text{ ms}$
Collector dissipation	P_C	1.2	W	
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}	50		70	V	$I_C = 50 \mu\text{A}$
Collector-to-emitter breakdown voltage	BV_{CEO}	50		70	V	$I_C = 5 \text{ mA}$
Collector cutoff current	I_{CBO}			10	μA	$V_{CB} = 40 \text{ V}$
Emitter cutoff current	I_{EBO}			3	mA	$V_{EB} = 5 \text{ V}$
DC current gain	h_{FE}	1000		10000		$V_{CE} = 2 \text{ V}$, $I_C = 1 \text{ A}$, single pulse
Collector-to-emitter saturation voltage	$V_{CE(sat)}$			1.5	V	$I_C/I_B = 1 \text{ A}/1 \text{ mA}$, single pulse
Output capacitance	C_{ob}		25		pF	$V_{CB} = 10 \text{ V}$, $I_E = 0 \text{ A}$, $f = 1 \text{ MHz}$

Electrical characteristic curves

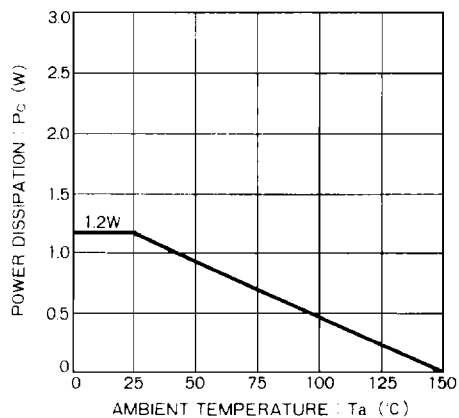


Figure 1

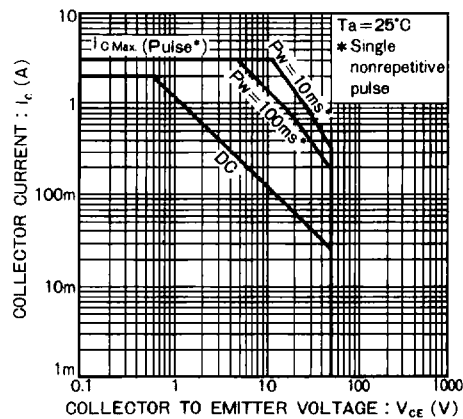


Figure 2

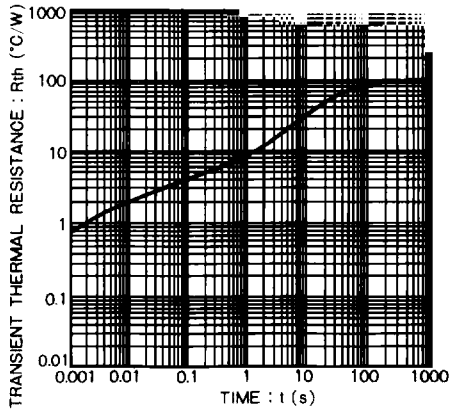


Figure 3

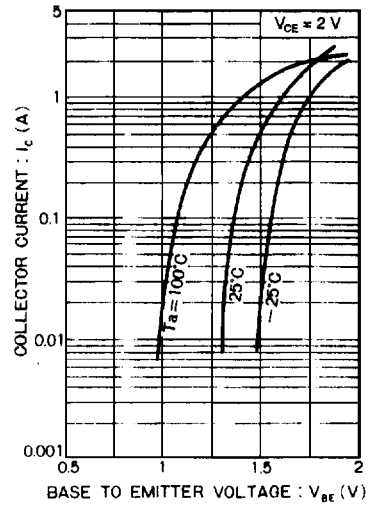


Figure 4

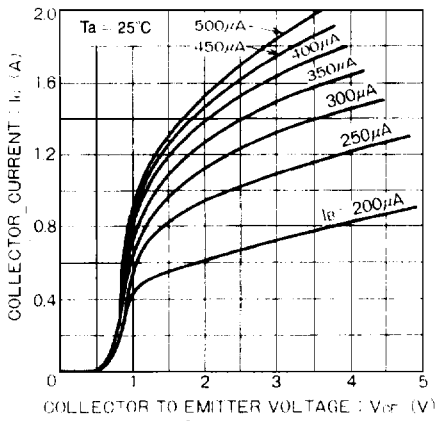


Figure 5

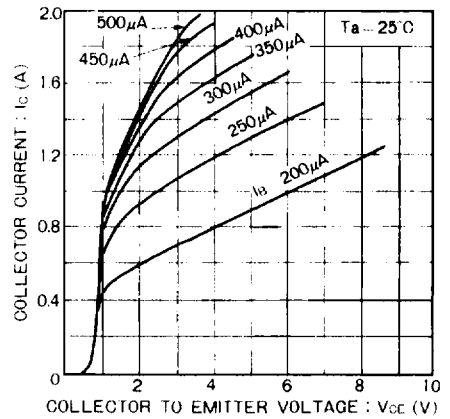


Figure 6

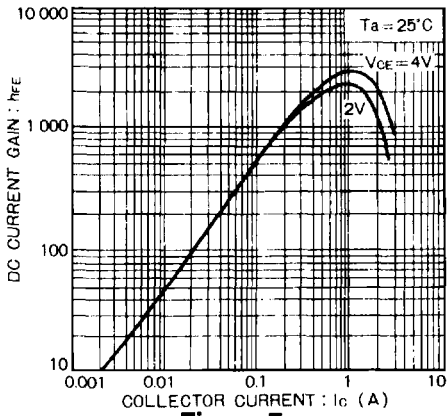


Figure 7

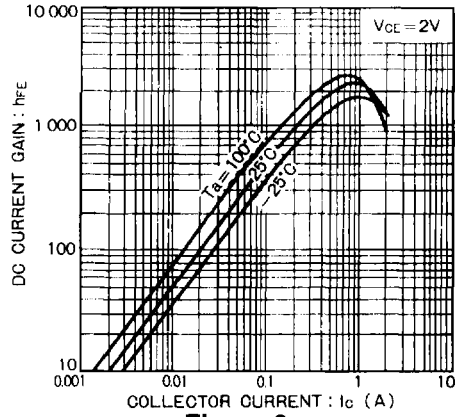


Figure 8

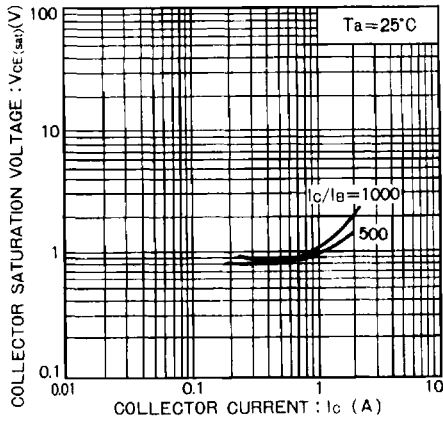


Figure 9

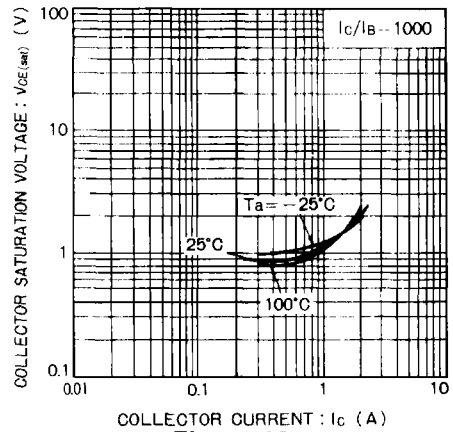


Figure 10

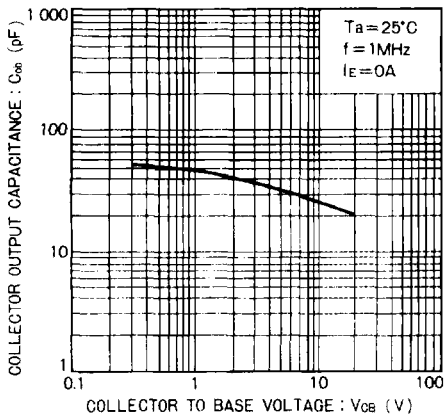


Figure 11

Ordering information

Package	Tape
Code	T105
Basic order quantity	2 000
2SD2010, $h_{FE} = 1\text{ k} \sim 10\text{ k}$	★
★ = Standard, ☆ = Semi-standard, * = Special order	