

Medium Power Transistor (Motor, Relay drive) ($60\pm 10V$, 2A)

2SD2212 / 2SD2143 / 2SD1866

●Features

- 1) Built-in zener diode between collector and base.
- 2) Strong protection against reverse surges due to "L" loads.
- 3) Built-in resistor between base and emitter.
- 4) Built-in damper diode.

●Absolute maximum ratings ($T_a = 25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	60 ± 10	V
Collector-emitter voltage	V_{CES}	60 ± 10	V
Emitter-base voltage	V_{EBO}	6	V
Collector current	I_C	2	A(DC)
		3	A(Pulse) ≈ 1
Collector power dissipation	P_C	2	W ≈ 2
		10	W($T_C=25^\circ C$)
		1	W ≈ 3
Junction temperature	T_J	150	$^\circ C$
Storage temperature	T_{stg}	$-55\sim+150$	$^\circ C$

≈ 1 Single pulse $P_w=100ms$

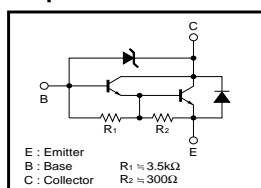
≈ 2 When mounted on a $40\times 40\times 0.7mm$ ceramic board.

≈ 3 Printed circuit board 1.7mm thick, collector plating $1cm^2$ or larger.

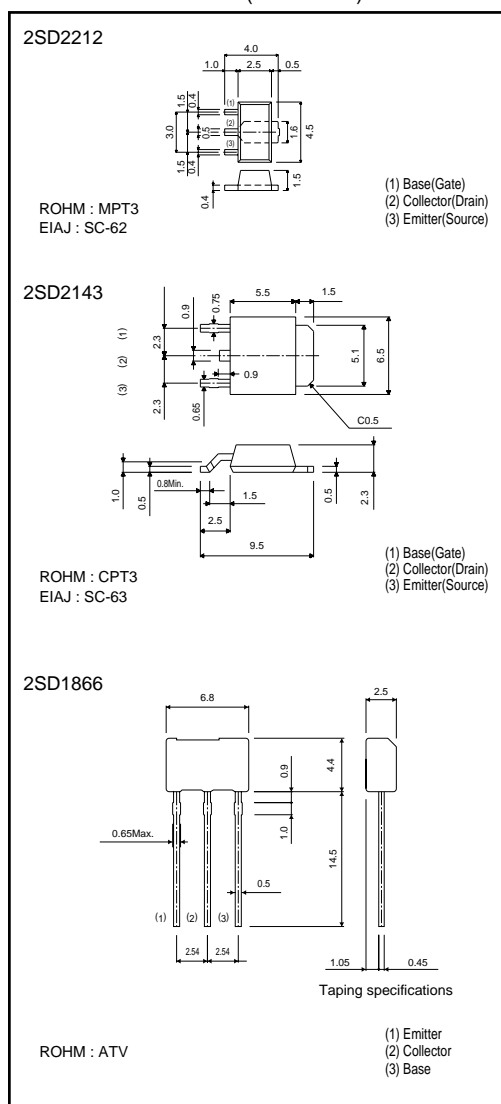
●Packaging specifications and h_{FE}

Type	2SD2212	2SD2143	2SD1866
Package	MPT3	CPT3	ATV
h_{FE}	1k~10k	1k~10k	1k~10k
Code	T100	TL	TV2
Basic ordering unit (pieces)	1000	2500	2500

●Equivalent circuit



●External dimensions (Units : mm)



●Electrical characteristics ($T_a = 25^\circ C$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	—	70	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	50	—	70	V	$I_C=5mA$
Collector cutoff current	I_{CBO}	—	—	1.0	μA	$V_{CB}=40V$
Emitter cutoff current	I_{EBO}	—	—	3	mA	$V_{EB}=5V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	1.5	V	$I_C/I_E=1A/1mA$
DC current transfer ratio	h_{FE}	1000	—	10000	—	$V_{CE}=2V, I_C=1A$
Output capacitance	C_{ob}	—	25	—	pF	$V_{CB}=10V, I_E=0A, f=1MHz$

* Measured using pulse current.