

Medium Power Transistor (Motor, Relay drive) (60±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 (Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CB0}	60±10	V
Collector-emitter voltage	V _{CE0}	60±10	V
Emitter-base voltage	V _{EB0}	6	V
Collector current	I _C	2	A(DC)
		3	A(Pulse) *1
Collector power dissipation	P _C	2	W
		10	W(Tc=25°C) *2
		1	W
			*3
Junction temperature	T _J	150	°C
Storage temperature	T _{stg}	-55~+150	°C

*1 Single pulse Pw=100ms

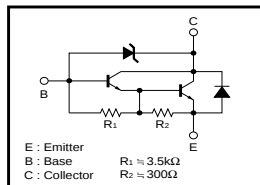
*2 When mounted on a 40×40×0.7mm ceramic board.

*3 Printed circuit board 1.7mm thick, collector plating 1cm² or larger.

●Packaging specifications and h_{FE}

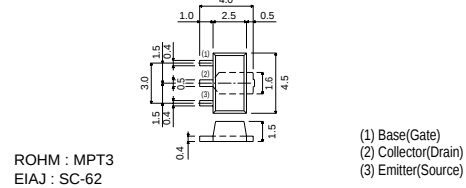
Type	2SD2212	2SD2143	2SD1866
Package	MPT3	CPT3	ATV
h _{FE}	1k~10k	1k~10k	1k~10k
Code	T100	TL	TV2
Basic ordering unit (pieces)	1000	2500	2500

●Equivalent circuit

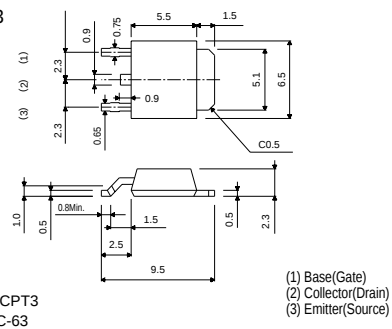


●External dimensions (Units : mm)

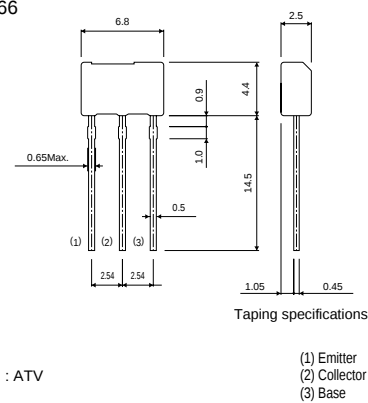
2SD2212



2SD2143



2SD1866



●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV _{CB0}	50	—	70	V	I _C =50μA
Collector-emitter breakdown voltage	BV _{CE0}	50	—	70	V	I _C =5mA
Collector cutoff current	I _{CBO}	—	—	1.0	μA	V _{CE} =40V
Emitter cutoff current	I _{EB0}	—	—	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.