

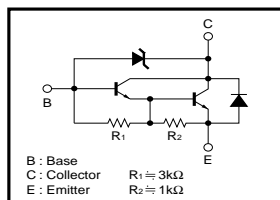
# Power transistor (90±10V, 3A)

## 2SC5060

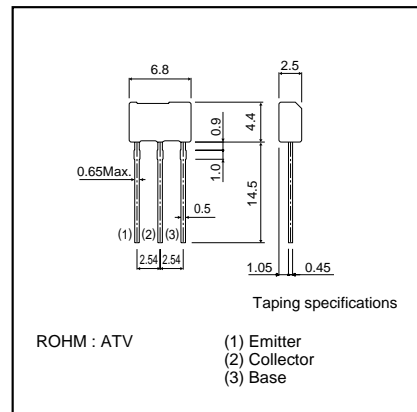
### ●Features

- 1) Built-in zener diode between collector and base.
- 2) Zener diode has low voltage dispersion.
- 3) Strong protection against reverse power surges due to "L" loads.
- 4) Darlington connection for high DC current gain.
- 5) Built-in resistor between base and emitter.
- 6) Built-in damper diode.

### ●Equivalent circuit



### ●External dimensions (Units : mm)



### ●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CB0</sub>	90±10	V
Collector-emitter voltage	V <sub>CE0</sub>	90±10	V
Emitter-base voltage	V <sub>EB0</sub>	6	V
Collector current	I <sub>C</sub>	1	A(DC)
	I <sub>CP</sub>	2	A(Pulse) *1
Collector power dissipation	P <sub>C</sub>	1	W *2
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

\*1 Single pulse P<sub>av</sub>=10ms

\*2 Printed circuit board : 1.7 mm thick, collector copper plating at least 100mm<sup>2</sup>.

### ●Packaging specifications and h<sub>FE</sub>

Type	2SC5060
Package	ATV
h <sub>FE</sub>	M
Code	TV2
Basic ordering unit (pieces)	2500

### ●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CB0</sub>	80	—	100	V	I <sub>C</sub> =50μA
Collector-emitter breakdown voltage	BV <sub>CE0</sub>	80	—	100	V	I <sub>C</sub> =1mA
Collector cutoff current	I <sub>CS0</sub>	—	—	10	μA	V <sub>CB</sub> =70V
Emitter cutoff current	I <sub>ES0</sub>	—	—	3	mA	V <sub>EB</sub> =5V
DC current transfer ratio	h <sub>FE</sub>	1000	—	2500	—	V <sub>CE</sub> =3V, I <sub>C</sub> =0.5A
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	1.5	V	I <sub>C</sub> /I <sub>E</sub> =500mA/1mA
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	—	—	2	V	I <sub>C</sub> /I <sub>E</sub> =500mA/1mA
Transition frequency	f <sub>T</sub>	—	80	—	MHz	V <sub>CE</sub> =5V, I <sub>E</sub> =0.1A, f=30MHz
Output capacitance	C <sub>ob</sub>	—	20	—	pF	V <sub>CE</sub> =10V, I <sub>E</sub> =0A, f=1MHz
Turn-on time	t <sub>on</sub>	—	0.2	—	μs	I <sub>C</sub> =0.8A, R <sub>θ</sub> =50Ω
Storage time	t <sub>stg</sub>	—	5	—	μs	I <sub>B1</sub> =-I <sub>C2</sub> =8mA
Fall time	t <sub>f</sub>	—	0.6	—	μs	V <sub>CC</sub> =40V

\*1 Measured using pulse current. \*2 Transition frequency of the device.