

2SC5840

Silicon NPN epitaxial planar type

Power supply for Audio & Visual equipments
such as TVs and VCRs

Industrial equipments such as DC-DC converters

■ Features

- High-speed switching (t_{stg} : storage time/ t_f : fall time is short)
- Low collector-emitter saturation voltage $V_{CE(sat)}$
- Superior forward current transfer ratio h_{FE} linearity
- TO-220D built-in: Excellent package with withstand voltage 5 kV guaranteed

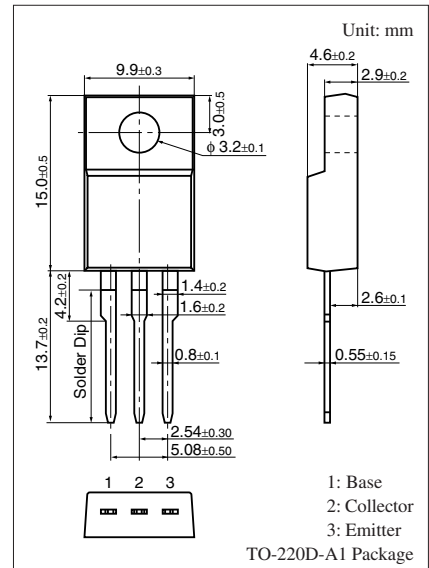
■ Absolute Maximum Ratings $T_C = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	V_{CBO}	80	V	
Collector-emitter voltage (Base open)	V_{CEO}	80	V	
Emitter-base voltage (Collector open)	V_{EBO}	5	V	
Collector current	I_C	3	A	
Peak collector current	I_{CP}	5	A	
Collector power dissipation	$T_C = 25^\circ\text{C}$	P_C	15	W
	$T_a = 25^\circ\text{C}$		2	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	

■ Electrical Characteristics $T_C = 25^\circ\text{C} \pm 3^\circ\text{C}$

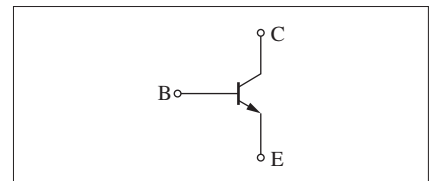
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 10\text{ mA}, I_B = 0$	80			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 80\text{ V}, I_E = 0$			100	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 80\text{ V}, I_B = 0$			100	μA
Forward current transfer ratio	h_{FE1}	$V_{CE} = 4\text{ V}, I_C = 0.2\text{ A}$	50			—
	h_{FE2}	$V_{CE} = 4\text{ V}, I_C = 1\text{ A}$	80		280	
	h_{FE3}	$V_{CE} = 4\text{ V}, I_C = 3\text{ A}$	20			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 3\text{ A}, I_B = 0.375\text{ A}$			0.7	V
Transition frequency	f_T	$V_{CE} = 10\text{ V}, I_C = 0.1\text{ A}, f = 10\text{ MHz}$		100		MHz
Turn-on time	t_{on}	$I_C = 1\text{ A}$, Resistance loaded		0.2		μs
Storage time	t_{stg}	$I_{B1} = 0.1\text{ A}, I_{B2} = -0.1\text{ A}$		0.9		μs
Fall time	t_f	$V_{CC} = 50\text{ V}$		0.15		μs

Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

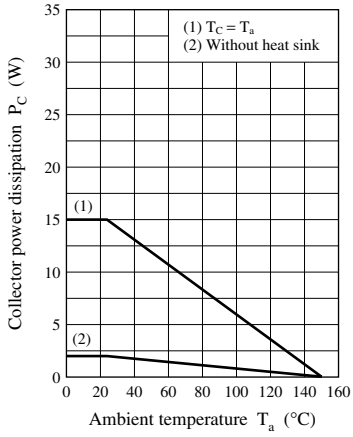


Marking Symbol: C5840

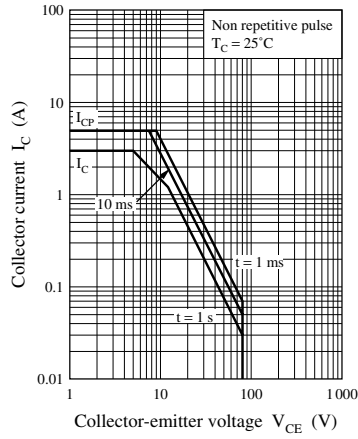
Internal Connection



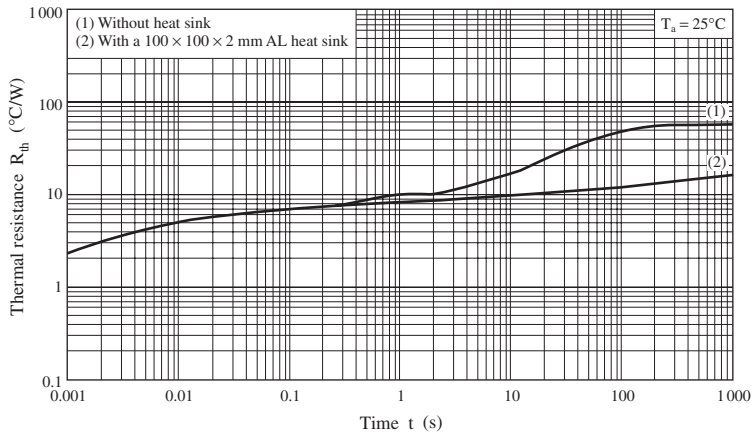
$P_C - T_a$



Safe operation area



$R_{th} - t$



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