

2SC3211, 2SC3211A

Silicon NPN Triple-Diffused Junction Mesa Type

High Breakdown Voltage, High Speed Switching

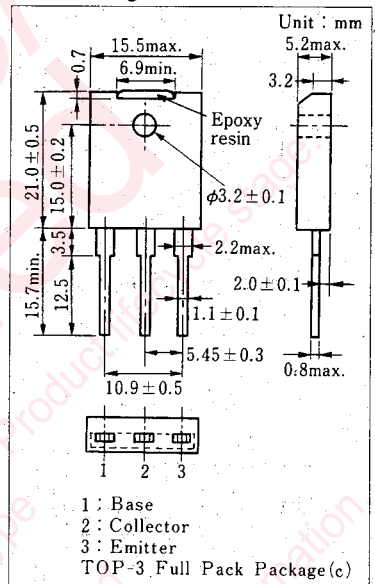
■ Features

- High speed switching
- High collector-base voltage (V_{CB0})
- Low collector-emitter saturation voltage ($V_{CE(sat)}$)
- "Full Pack" package for simplified mounting on a heat sink with one screw

■ Absolute Maximum Ratings ($T_c=25^\circ\text{C}$)

Item	Symbol	Value	Unit
Collector-base voltage	2SC3211	800	V
	2SC3211A		
Collector-emitter voltage	V_{CE0}	500	V
Emitter-base voltage	V_{EBO}	8	V
Peak collector current	I_{CP}	10	A
Collector current	I_C	5	A
Base current	I_B	3	A
Collector power dissipation	$T_c=25^\circ\text{C}$	P_C	W
	$T_a=25^\circ\text{C}$		
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 ~ +150	$^\circ\text{C}$

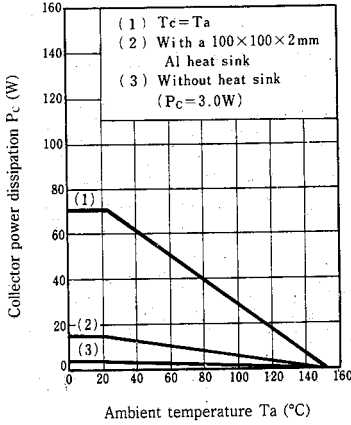
■ Package Dimensions



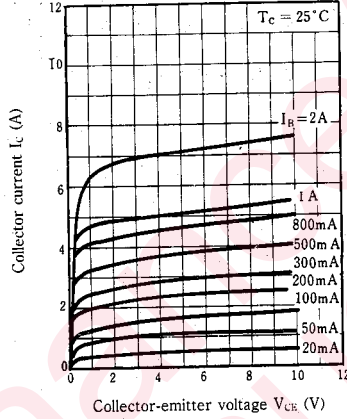
■ Electrical Characteristics ($T_c=25^\circ\text{C}$)

Item	Symbol	Condition	min.	typ.	max.	Unit
Collector cutoff current	2SC3211	$V_{CB}=800\text{ V}, I_E=0$			100	μA
	2SC3211A					
Emitter cutoff current	I_{EBO}	$V_{EB}=5\text{ V}, I_C=0$			100	μA
Collector-emitter voltage	$V_{CE0(sus)}$	$I_C=0.2\text{ A}, L=25\text{ mH}$	500			V
DC current gain	h_{FE1}	$V_{CE}=5\text{ V}, I_C=0.1\text{ A}$	15			
	h_{FE2}	$V_{CE}=5\text{ V}, I_C=3\text{ A}$	8			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=3\text{ A}, I_B=0.6\text{ A}$			1	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=3\text{ A}, I_B=0.6\text{ A}$			1.5	V
Transition frequency	f_T	$V_{CE}=10\text{ V}, I_C=0.5\text{ A}, f=1\text{ MHz}$		3		MHz
Turn-on time	2SC3211	t_{on}	$I_C=3\text{ A}$		1	μs
	2SC3211A					
Storage time	t_{stg}	$I_{B1}=0.6\text{ A}, I_{B2}=-0.6\text{ A}$			3	μs
Collector current fall time	2SC3211	t_f	$V_{CC}=200\text{ V}$		1	μs
	2SC3211A					

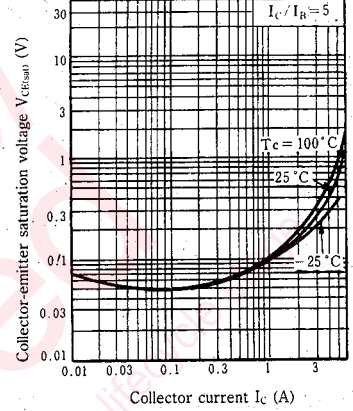
$P_C - T_a$



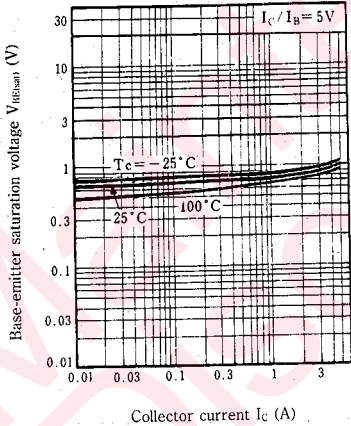
$I_C - V_{CE}$



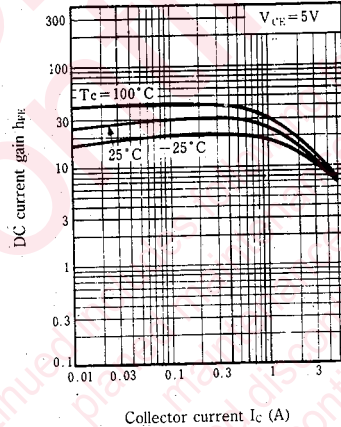
$V_{CE(sat)} - I_C$



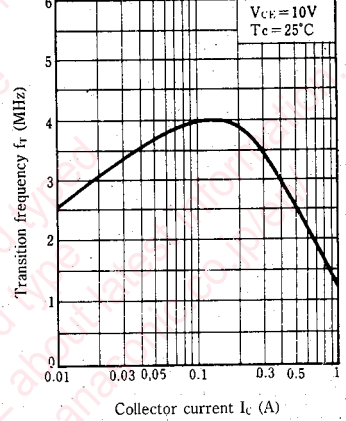
$V_{BE(sat)} - I_C$



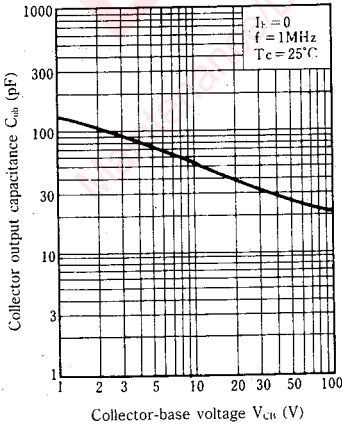
$h_{FE} - I_C$



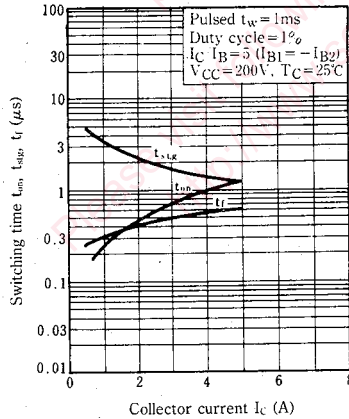
$f_T - I_C$



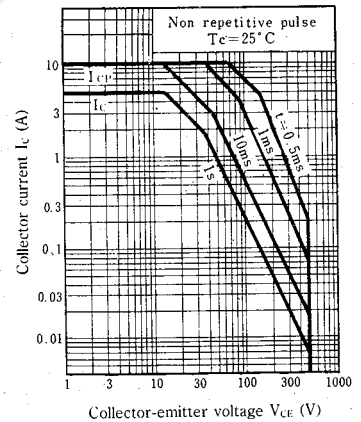
$C_{ob} - V_{CB}$



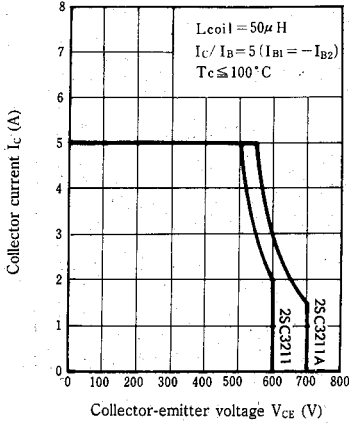
$t_{on}, t_{stg}, t_f - I_C$



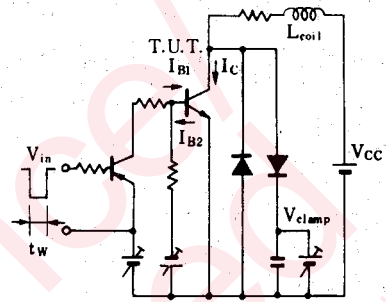
Safety operation area-forward bias (ASO)



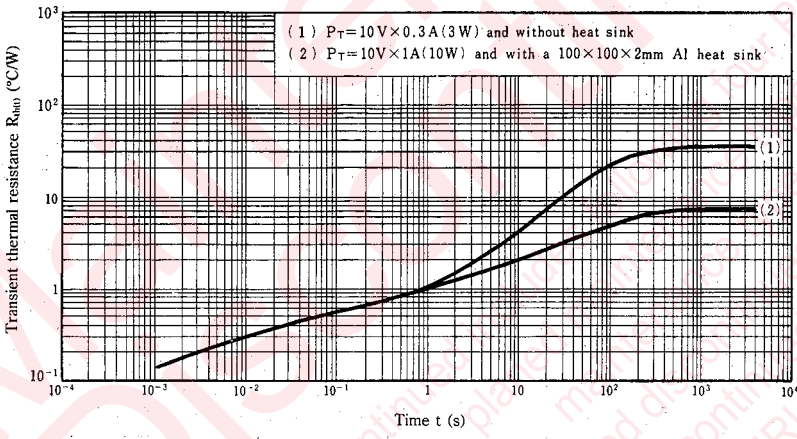
Safety operation area-reverse bias (ASO)



Measurement circuit of reverse bias ASO



$R_{th}(t) - t$



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