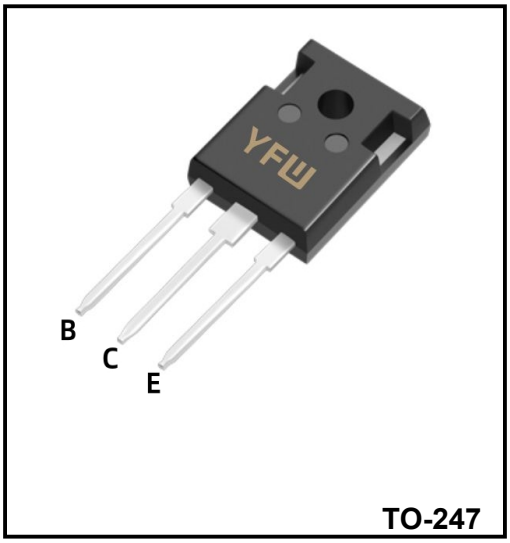
NPN Plastic-Encapsulate Transistors



Applications

- High-Fidelity Audio Output Amplifier
- General Purpose Power Amplifier

Features

- High Current Capability: I_C = 15A
- High Frequency : 30MHz.
- High voltage BV_{CEO} =230V
- Complement to 2SA1943

Absolute Maximum Rating (Ta= 25°C unless otherwise noted)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	BV_{CBO}	230	V
Collector-Emitter Voltage	BV_{CEO}	230	V
Emitter-Base Voltage	BV_{EBO}	5	V
Collector Current	I_C	15	A
Base Current	I_B	1.5	A
Power Dissipation	P_D	130	W
Junction Temperature	T_j	150	℃
Storage Temperature	T_{stg}	-40～150	℃

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

Thermal Characteristics (Ta= 25°C unless otherwise noted)

Parameter	Symbol	Max.	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.96	℃/W

* Device mounted on minimum pad size

Electrical Characteristics (Ta=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	I_C = 5mA，I_E = 0	230			V
Collector-emitter breakdown voltage	BV_{CEO}	I_C = 10mA，I_B = 0	230			V
Emitter-base breakdown voltage	BV_{EBO}	I_E = 5mA，I_C = 0	5			V
Collector cut-off current	I_{CBO}	V_{CB} = 230V，I_E = 0			5	μA
Emitter cut-off current	I_{EBO}	V_{EB} = 5V，I_C = 0			5	μA
DC current gain	h_{FE} (1)	V_{CE}= 5V，I_C= 1A	55		160	
	h_{FE} (2)	V_{CE}= 5V，I_C= 7A	35	60		
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C = 8A，I_B = 0.8A		0.4	3.0	V
Base-emitter on voltage	$V_{BE(on)}$	V_{CE}= 5V，I_C= 7A		1.0	1.5	V
Transition frequency	f_T	V_{CE}=5V, I_C= 1A,		30		MHz
Output Capacitance	C_{ob}	V_{CB}=10V,I_E = 0,f=1MHz		200		pF

* Pulse Test: Pulse Width=20μs, Duty Cycle

hFE (1) Classification

Classification	2SC5200-R	2SC5200-O
Range	55 ~ 110	80 ~ 160

Typical Characteristics

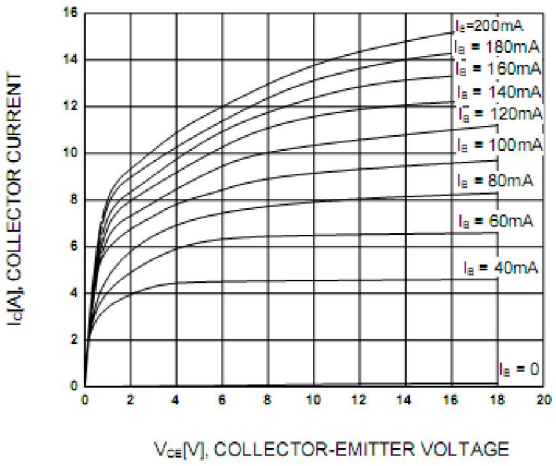


Figure 1. Static Characteristic

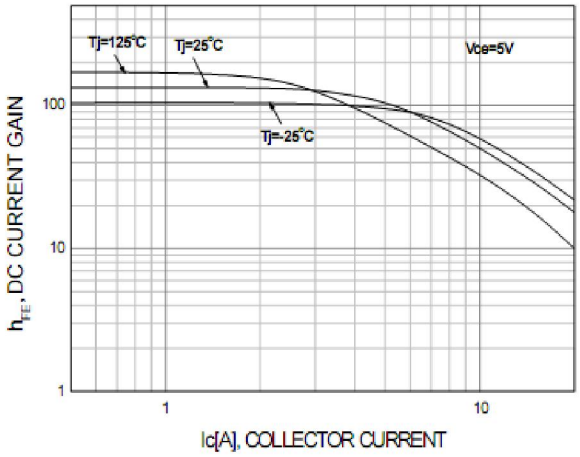


Figure 2. DC current Gain

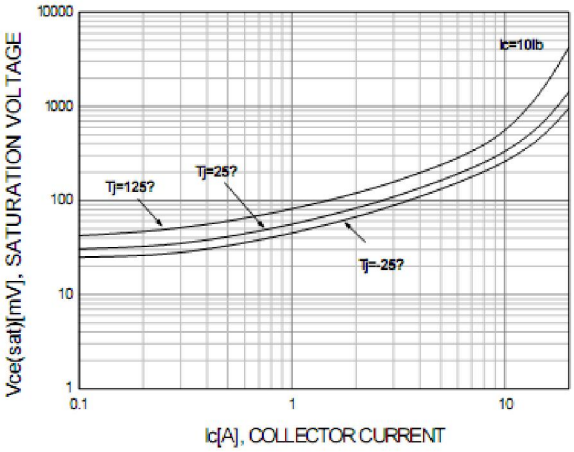


Figure 3. Collector-Emitter Saturation Voltage

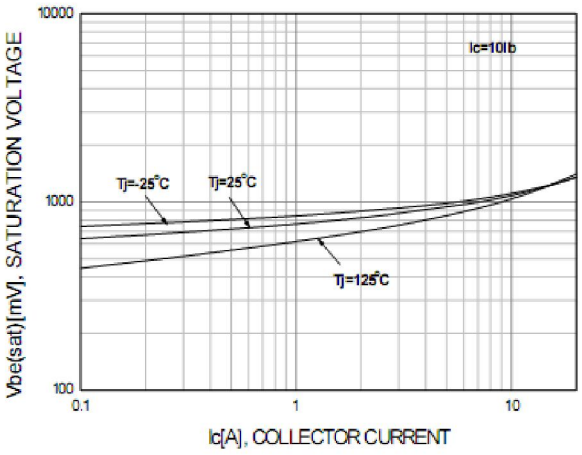


Figure 4. Base-Emitter Saturation Voltage

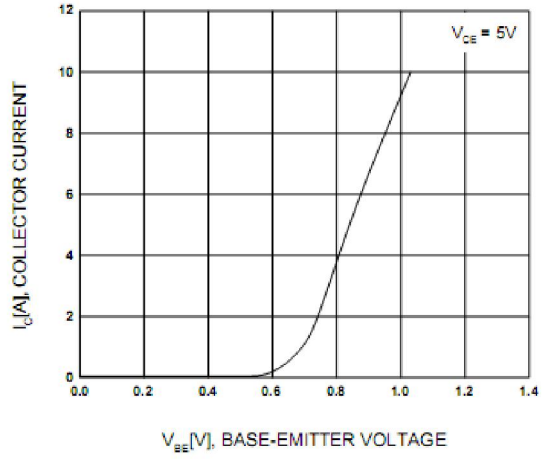


Figure 5. Base-Emitter On Voltage

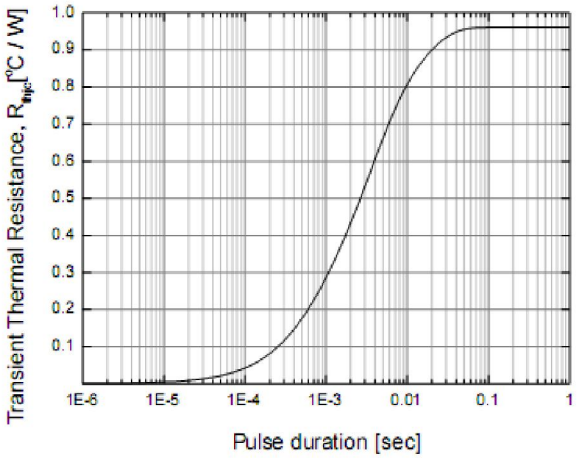
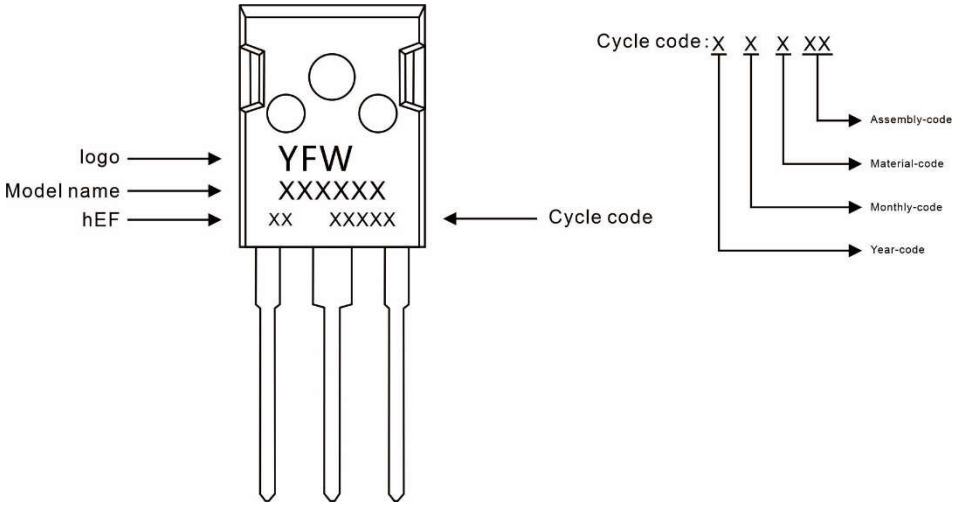


Figure 6. Thermal Resistance

Marking Diagram

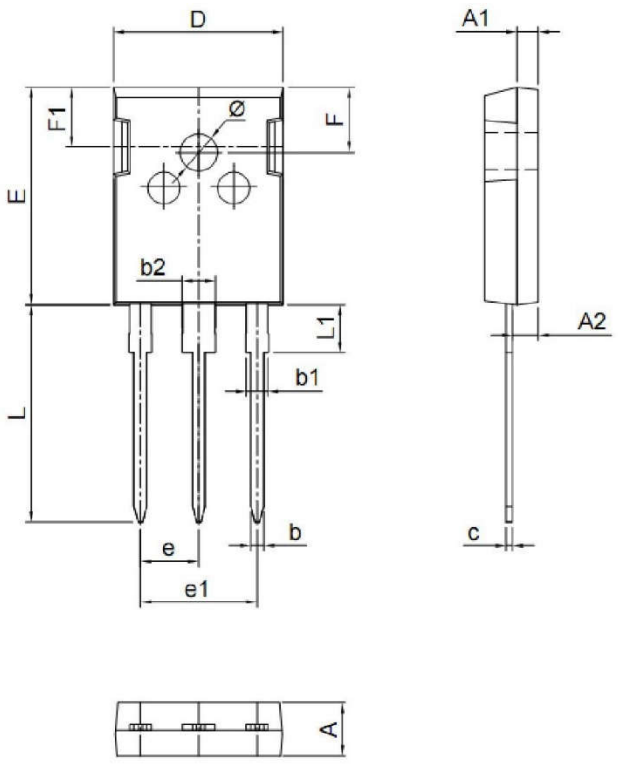


Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
2SC5200	TO-247	0.209oz(5.93g)	30pcs/tube	600PCS/Box 2400PCS/Carton

Package Dimensions

TO-247



Symbol	Dimensions in mm		Dimensions in Inch	
	Min.	Max.	Min.	Max.
A	4.90	5.10	0.193	0.201
A1	1.90	2.10	0.075	0.083
A2	2.29	2.54	0.090	0.100
b	1.00	1.40	0.039	0.055
b1	2.00	2.20	0.079	0.087
b2	3.00	3.20	0.118	0.126
c	0.50	0.70	0.020	0.028
D	15.75	16.05	0.620	0.632
E	20.20	20.80	0.795	0.819
e	5.45 (BSC)		0.215 (BSC)	
e1	10.90 (BSC)		0.429 (BSC)	
F	6.05	6.25	0.238	0.246
F1	5.80	6.00	0.228	0.236
L	20.10	20.40	0.791	0.803
L1	4.05	4.35	0.159	0.171
Φ	3.50	3.70	0.138	0.146

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