

Plastic-Encapsulate Transistors

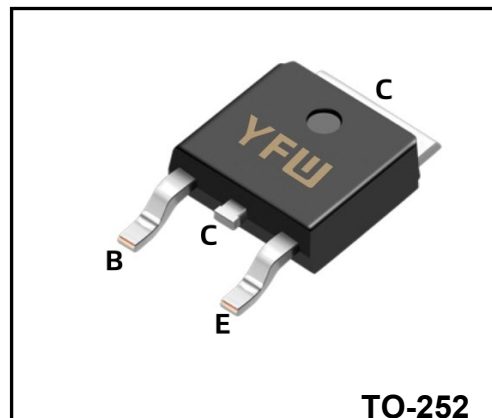
TRANSISTOR (NPN)

Applications

- ◆DC-DC Converter Applications
- ◆High Current Switching Applications

FEATURES

- ◆Low collector saturation voltage: $V_{CE(sat)} = 0.4 V_{(max)} (I_C = 3 A)$
- ◆High speed switching time: $t_{stg} = 1.0\mu s$ (typ.)



Absolute Maximum Rating (Ta=25℃)

Parameter	Symbol	Value	Unit
Collector-base voltage	BV_{CBO}	100	V
Collector-emitter voltage	BV_{CEO}	80	V
Emitter-base voltage	BV_{EBO}	7	V
Collector current	I_C	5	A
Collector power dissipation	P_C	1.25	W
Junction temperature	T_j	150	℃
Storage temperature	T_{stg}	-55~150	℃

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = 100\mu A, I_E = 0$	100			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1mA, I_B = 0$	80			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 100\mu A, I_C = 0$	7			V
Collector -base cut-off current	I_{CBO}	$V_{CB} = 100V, I_E = 0$			1	μA
Emitter- base cut-off current	I_{EBO}	$V_{EB} = 7V, I_C = 0$			1	μA
DC current gain*	$h_{FE(1)}$	$V_{CE} = 1V, I_C = 1A$	70		240	
	$h_{FE(2)}$	$V_{CE} = 1V, I_C = 3A$	40			
Collector-emitter saturation voltage*	$V_{CE(sat)}$	$I_C = 3A, I_B = 0.15A$			0.4	V
Base -emitter saturation voltage*	$V_{BE(sat)}$	$I_C = 3A, I_B = 0.15A$			1.2	V
Transition frequency	f_T	$V_{CE} = 4V, I_C = 1.5A$		120		MHz
Output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0$		80		pF

Note *Pulse Test: $PW \leq 350\mu s$, Duty Cycle $\leq 2\%$

$h_{FE(1)}$ Classification

Classification	2SC3303-O	2SC3303-Y
Range	70-140	120-240

Typical Characteristics

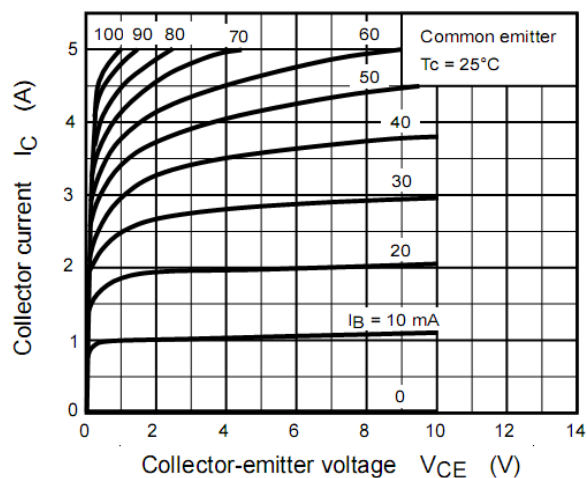


Figure 1. Static Characteristic

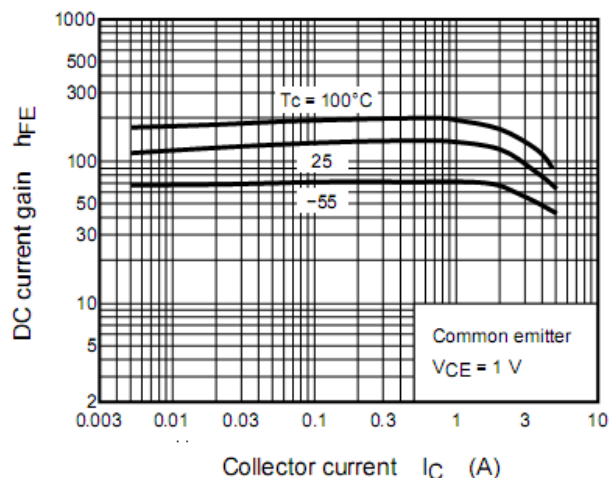


Figure 2. DC current Gain

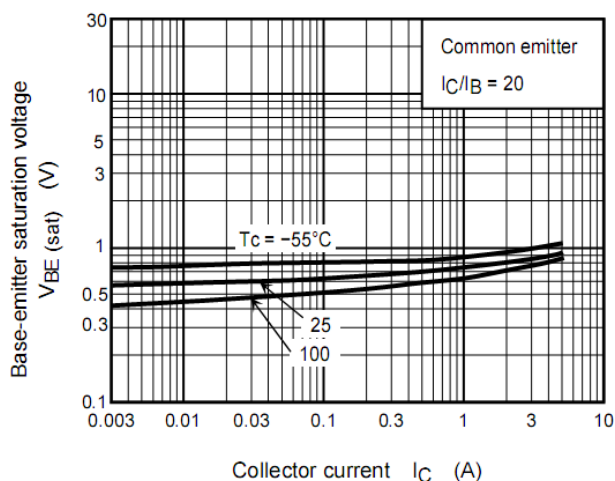


Figure 3. Base-Emitter Voltage
vs Collector current

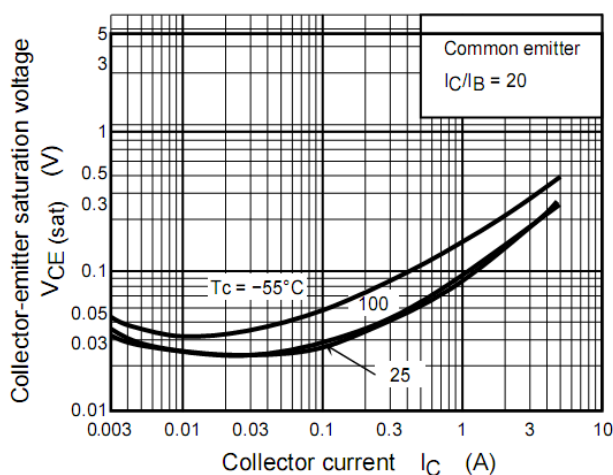


Figure 4. Collector e-Emitter Voltage
vs Collector current

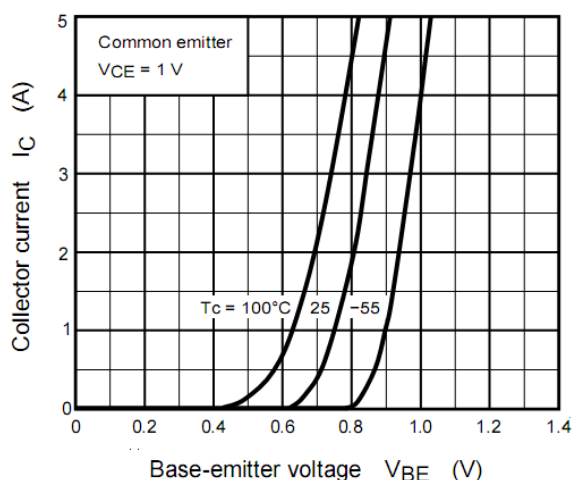


Figure 5. Collector current
vs Base-Emitter Voltage

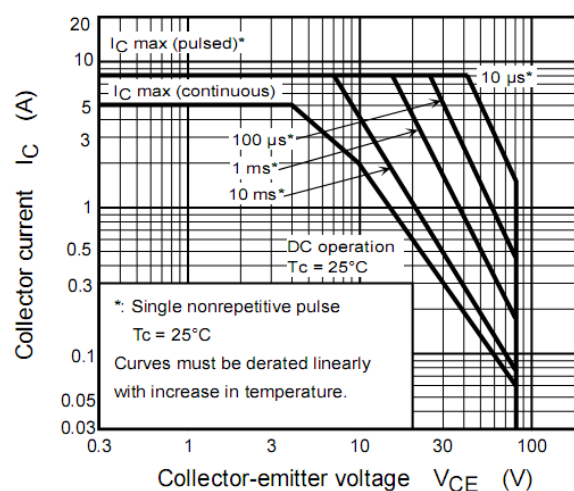
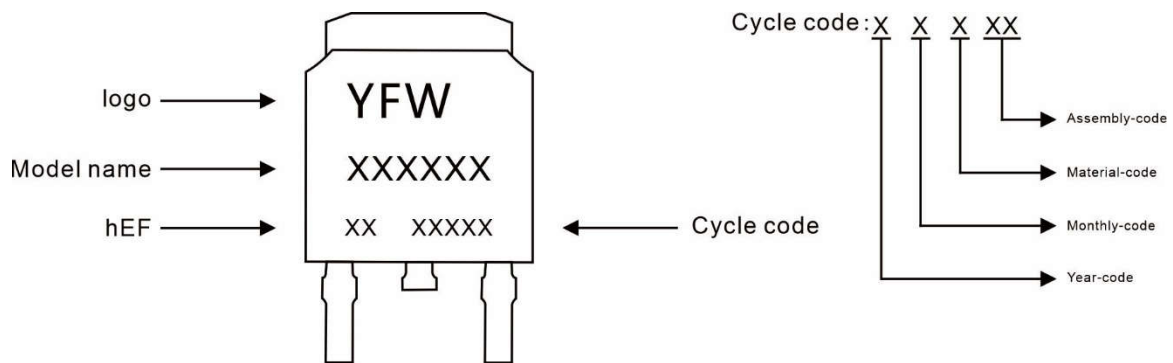


Figure 6. Safe Operating Area

Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
2SC3303	TO-252	0.011oz(0.32g)	2500pcs/reel	5000pcs/box 25000pcs/Carton

Package Dimensions

TO-252

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.50	0.087	0.098
A1	0.00	0.12	0.000	0.005
A2	2.20	2.40	0.087	0.094
B	1.20	1.60	0.047	0.063
b	0.50	0.70	0.020	0.028
b1	0.70	0.90	0.028	0.035
c	0.40	0.60	0.016	0.024
c1	0.40	0.60	0.016	0.024
D	6.35	6.65	0.250	0.262
D1	5.20	5.40	0.205	0.213
E	5.40	5.70	0.213	0.224
e	2.20	2.40	0.087	0.094
e1	4.40	4.80	0.173	0.189
L	10.00	11.00	0.393	0.433
L1	2.70	3.10	0.106	0.122
L2	1.40	1.80	0.055	0.071
L3	0.90	1.50	0.035	0.059

Disclaimer

The information presented in this document is for reference only. GuangDong Youfeng Microelectronics Co.,Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise. The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), YFW or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale. This publication supersedes & replaces all information previously supplied. For additional information, please visit our website <https://www.yfwdiode.com>, or consult YFW sales office for further assistance.