

NPN Plastic-Encapsulate Transistors

Applications

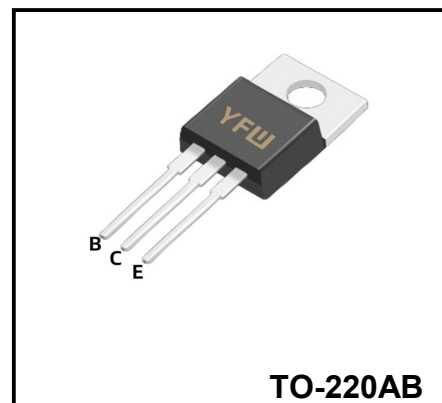
◆High Voltage and Switching

Features

◆High Sustaining Voltage : $BV_{CEO}=100V$

◆1A Rated Collector Current

◆Complementary to TIP30B



Absolute Maximum Rating ($T_a=25^{\circ}C$)

Parameter		Symbol	Value	Unit
Collector-Base Voltage		BV_{CBO}	80	V
Collector-Emitter Voltage		BV_{CEO}	80	V
Emitter-Base Voltage		BV_{EBO}	5	V
Collector Current (DC)		I_C	1	A
Collector Current (Pulse)		I_{CP}	3	A
Base Current		I_B	0.4	A
Collector Dissipation	$T_a = 25^{\circ}C$	P_C	2	W
	$T_c = 25^{\circ}C$		30	
Junction Temperature		T_j	150	$^{\circ}C$
Storage Temperature		T_{stg}	-65~150	$^{\circ}C$
Thermal Resistance, Junction to Ambient		$R_{\theta JA}$	62.5	$^{\circ}C/W$
Thermal Resistance, Junction to Case		$R_{\theta JC}$	4.2	$^{\circ}C/W$

Electrical Characteristics(Ta=25℃)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = 0.5mA, I_E = 0$	80			V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 10mA, I_B = 0$	80			V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 0.5mA, I_C = 0$	5			V
Collector cut-off current	I_{CBO}	$V_{CE} = 80V, I_E = 0$			0.2	mA
Collector cut-off current	I_{CEO}	$V_{CB} = 60V, I_E = 0$			0.3	mA
Emitter cut-off current	I_{EBO}	$V_{EB} = 5V, I_C = 0$			1	mA
DC current gain *	h_{FE}	$V_{CE} = 4V, I_C = 0.2A$ $V_{CE} = 4V, I_C = 1A$	40 15			
Collector-emitter saturation voltage*	$V_{CE(sat)}$	$I_C = 1A, I_B = 125mA$			0.7	V
Base-Emitter ON Voltage *	$V_{BE(on)}$	$V_{CE} = 4V, I_C = 1A$			1.3	V
Current Gain Bandwidth Product	f_T	$V_{CE}=10V, I_C=0.2A$	3			MHz

* Pulse Test : Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$

Typical Characteristics

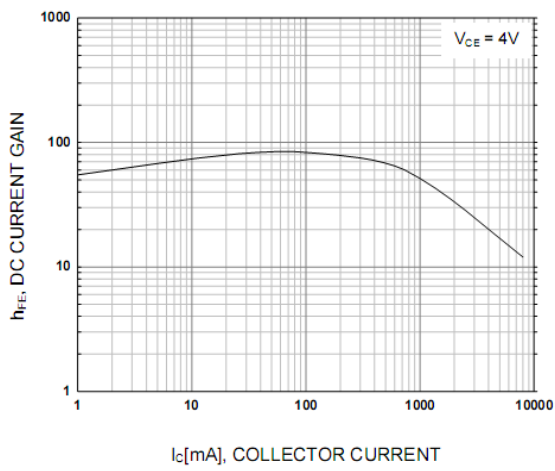


Figure 1. DC current Gain

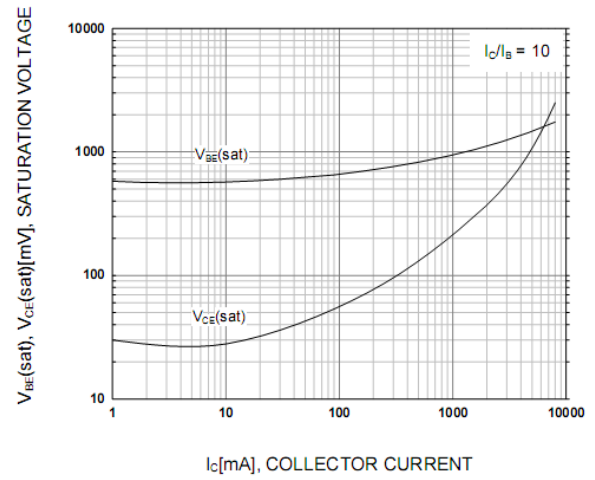


Figure 2. Base-Emitter Saturation Voltage and Collector-Emitter Saturation Voltage

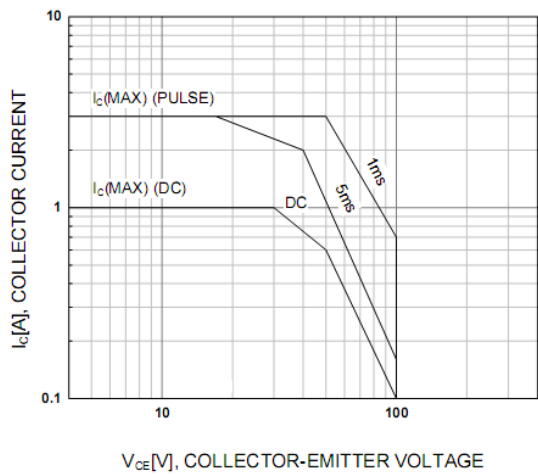


Figure 3. Safe Operating Area

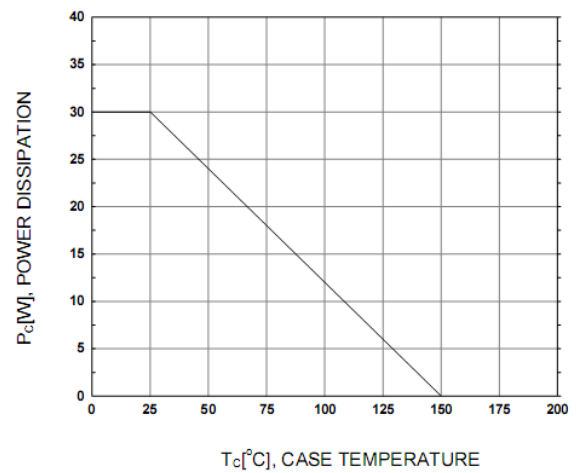
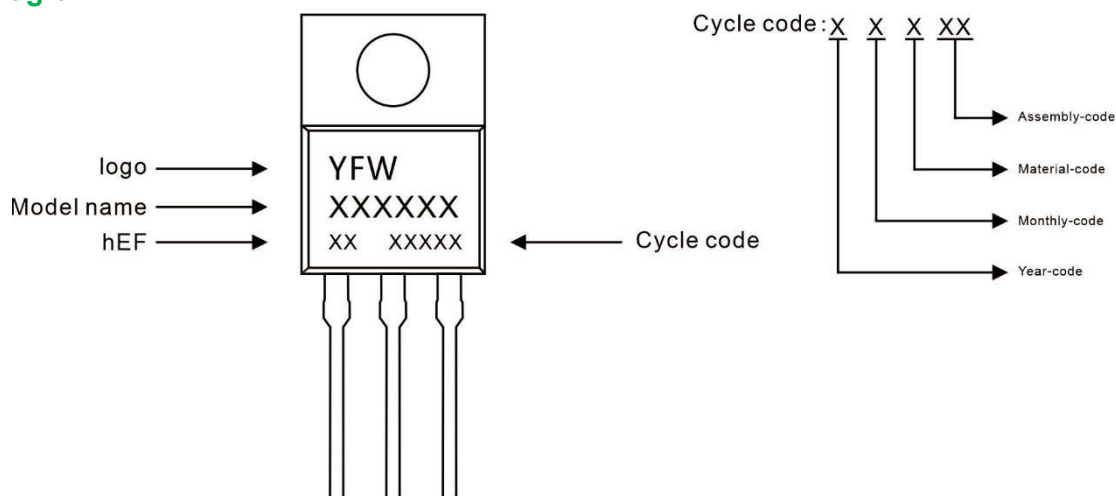


Figure 4. Power Derating

Marking Diagram



Ordering information

Model name	Package	Unit Weight	Base Quantity	Packing Quantity
TIP29B	TO-220AB	0.07oz(1.96g)	50pcs/tube	1000PCS/Box 5000PCS/Carton

Package Dimensions

TO-220AB

Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A1	2.52	2.82	0.099	0.111
b	0.71	0.91	0.028	0.036
b1	1.17	1.37	0.046	0.054
c	0.30	0.50	0.012	0.020
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.50	8.90	0.335	0.350
E1	12.00	12.50	0.472	0.492
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	2.60	2.80	0.102	0.110
L	13.20	13.80	0.520	0.543
L1	3.80	4.20	0.150	0.165
Φ	3.60	3.96	0.142	0.156

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