

TO-220



Pin Definition:

1. Base
2. Collector
3. Emitter

PRODUCT SUMMARY

BV_{CEO}	800V
BV_{CBO}	1200V
I_C	4A
$V_{CE(SAT)}$	3V @ $I_C / I_B = 2.5A / 0.5A$

Features

- High Voltage
- High Speed Switching

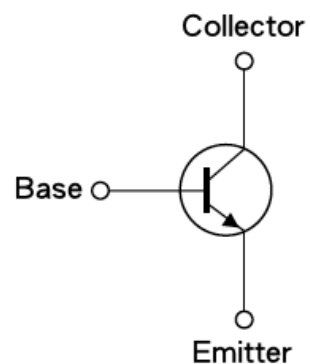
Structure

- Silicon Triple Diffused Type
- NPN Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSC5327CZ C0	TO-220	50pcs / Tube

Block Diagram



Absolute Maximum Rating ($T_a = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	1200V	V
Collector-Emitter Voltage	V_{CEO}	800V	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current	DC	4	A
	Pulse	10	
Base Current	DC	2	A
	Pulse	5	
Total Power Dissipation	P_D	50	W
Operating Junction Temperature	T_J	+150	$^\circ\text{C}$
Operating Junction and Storage Temperature Range	T_{STG}	- 55 to +150	$^\circ\text{C}$

Note: Single Pulse. $P_W = 300\mu\text{s}$, Duty $\leq 2\%$

Electrical Specifications (Ta = 25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Collector-Base Voltage	I _C =1mA, I _B =0	BV _{CBO}	1200	--	--	V
Collector-Emitter Breakdown Voltage	I _C =5mA, I _E =0	BV _{CEO}	800	--	--	V
Emitter-Base Breakdown Voltage	I _E =1mA, I _C =0	BV _{EBO}	7	--	--	V
Collector Cutoff Current	V _{CE} =800V, I _B =0	I _{CEO}	--	--	10	uA
Collector Cutoff Current	V _{CB} =1200V, I _E =0	I _{CBO}	--	--	1	mA
Emitter Cutoff Current	V _{EB} = 7V, I _C =0	I _{EBO}	--	--	10	uA
Collector-Emitter Saturation Voltage	I _C =1.5A, I _B =0.3A	V _{CE(SAT)} 1	---	--	0.6	V
Collector-Emitter Saturation Voltage	I _C =2.5A, I _B =0.5A	V _{CE(SAT)} 2	---	--	2.0	V
Base-Emitter Saturation Voltage	I _C =1.5A, I _B =0.3A	V _{BE(SAT)}	--	--	1.5	V
DC Current Gain	V _{CE} =5V, I _C = 0.2A	h _{FE}	20	--	40	
	V _{CE} =5V, I _C = 1A		10	--	--	
	V _{CE} =5V, I _C = 2.5A		5	--	--	
Dynamic						
Frequency	V _{CE} =10V, I _C =0.2A	f _T	--	15	--	MHz
Output Capacitance	V _{CB} =10V, f =1MHz	Cob	--	60	--	pF
Resistive Load Switching Time (Ratings)						
Rise Time	V _{CC} =250V, I _C =1.5A, I _{B1} =0.3, -I _{B2} =-0.6A, t _P =25uS	t _r		1.4	2	uS
Storage Time		t _{STG}	--	3	5	uS
Fall Time		t _f	--	0.2	0.4	uS

Note: pulse test: pulse width $\leq 300\mu\text{S}$, duty cycle $\leq 2\%$

Electrical Characteristics Curve ($T_a = 25^\circ\text{C}$, unless otherwise noted)

Figure 1. Static Characteristics

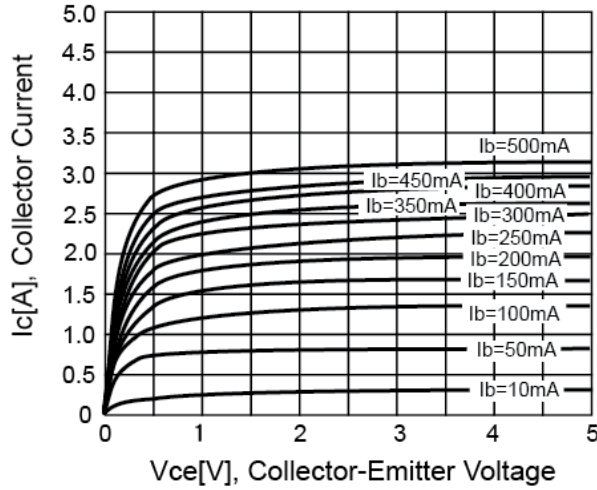


Figure 2. DC Current Gain

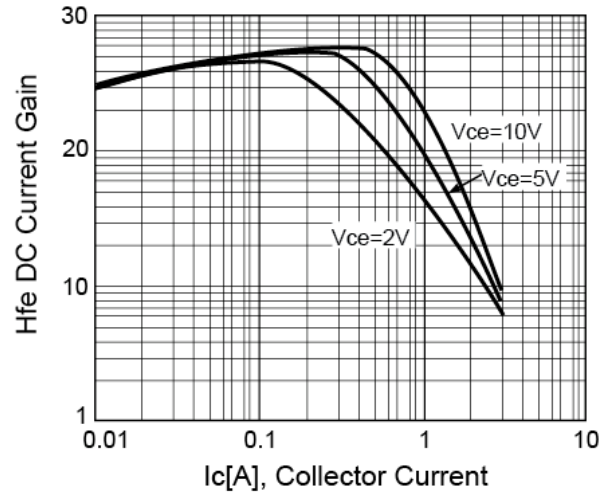


Figure 3. $V_{CE(SAT)}$ V.S. $V_{BE(SAT)}$

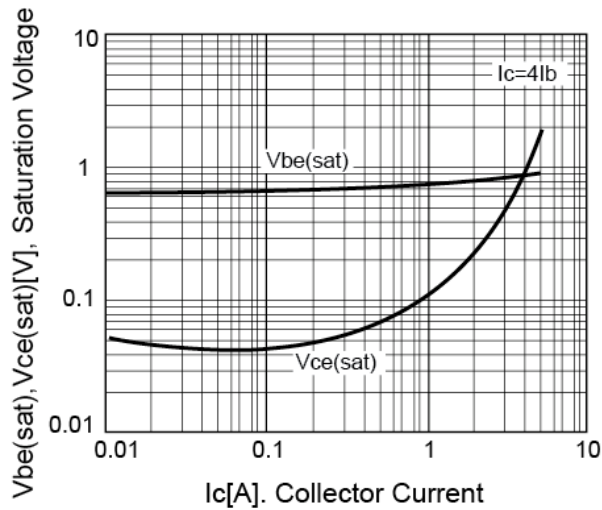
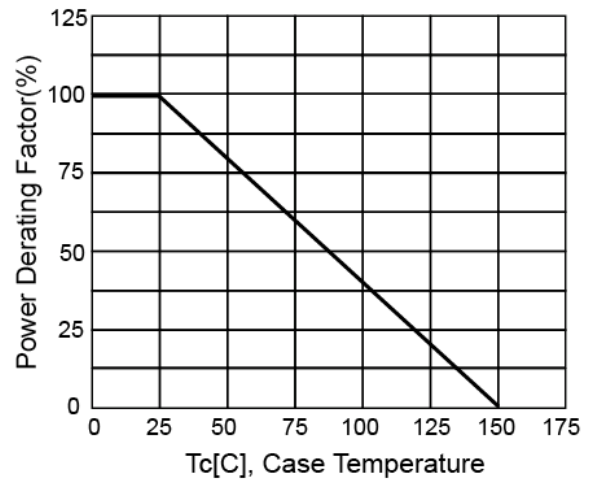
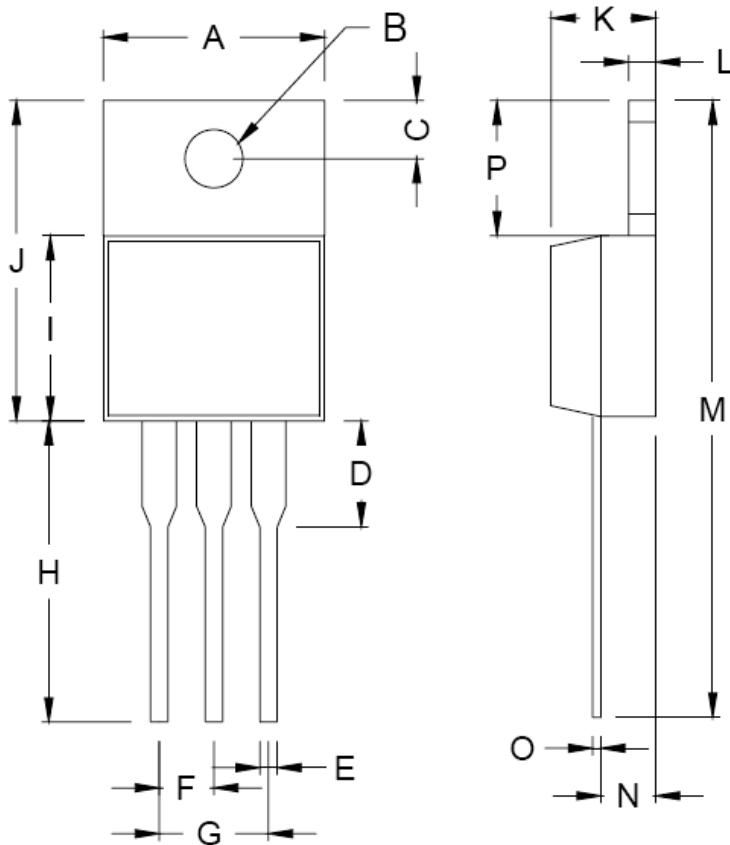


Figure 4. Power Derating

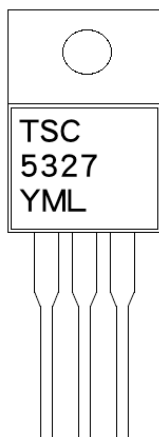


TO-220 Mechanical Drawing



TO-220 DIMENSION				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	10.000	10.500	0.394	0.413
B	3.740	3.910	0.147	0.154
C	2.440	2.940	0.096	0.116
D	-	6.350	-	0.250
E	0.381	1.106	0.015	0.040
F	2.345	2.715	0.092	0.058
G	4.690	5.430	0.092	0.107
H	12.700	14.732	0.500	0.581
J	14.224	16.510	0.560	0.650
K	3.556	4.826	0.140	0.190
L	0.508	1.397	0.020	0.055
M	27.700	29.620	1.060	1.230
N	2.032	2.921	0.080	0.115
O	0.255	0.610	0.010	0.024
P	5.842	6.858	0.230	0.270

Marking Diagram



- Y = Year Code
M = Month Code
(A=Jan, B=Feb, C=Mar, D=Apl, E=May, F=Jun, G=Jul, H=Aug, I=Sep, J=Oct, K=Nov, L=Dec)
L = Lot Code

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