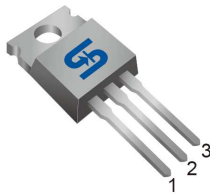


TO-220



Pin Definition:

1. Base
2. Collector
3. Emitter

PRODUCT SUMMARY

BV_{CEO}	420V
BV_{CBO}	1050V
I_C	4A
$V_{CE(SAT)}$	0.5V @ $I_C=1A$, $I_B=0.2A$

Features

- High Voltage Capability
- High Switching Speed

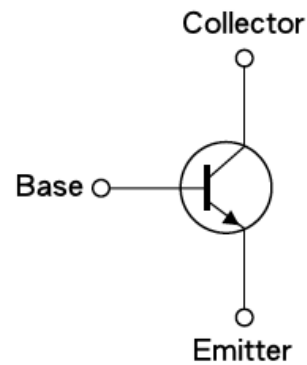
Structure

- Silicon Triple Diffused Type
- NPN Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSC742CZ 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}	1050	V
Collector-Emitter Voltage @ $V_{BE}=0V$	V_{CES}	420	V
Emitter-Base Voltage	V_{EBO}	15	V
Collector Current	I_C	4	A
Collector Peak Current ($t_p < 5ms$)	I_{CM}	8	A
Base Current	I_B	2	A
Base Peak Current ($t_p < 5ms$)	I_{BM}	4	A
Power Total Dissipation @ $T_c=25^\circ\text{C}$	P_{DTOT}	70	W
Maximum Operating Junction Temperature	T_J	+150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

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

Thermal Performance

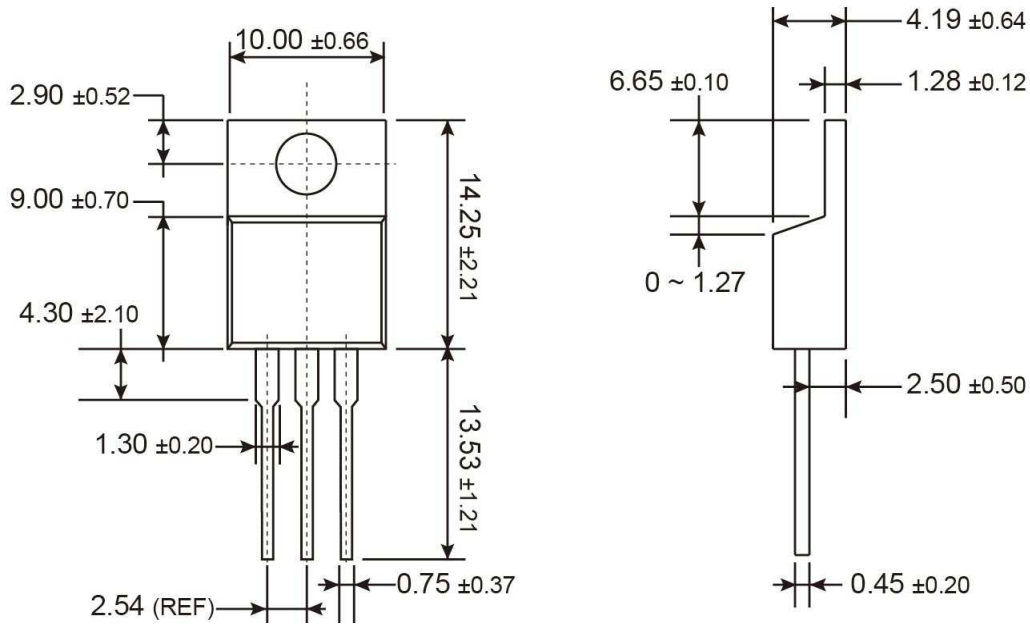
Parameter	Symbol	Limit	Unit
Thermal Resistance - Junction to Case	$R\theta_{JC}$	1.8	$^\circ\text{C/W}$
Thermal Resistance - Junction to Ambient	$R\theta_{JA}$	62.5	$^\circ\text{C/W}$

Electrical Specifications ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Collector-Base Voltage	I _C =0.5mA	BV _{CBO}	1050	--	--	V
Collector-Emitter Breakdown Voltage	I _C =5mA	BV _{CEO}	420	--	--	V
Emitter-Base Breakdown Voltage	I _E =1mA	BV _{EBO}	15	--	--	V
Collector Cutoff Current	V _{CE} =400V, I _B =0	I _{CEO}	--	10	250	uA
Collector Cutoff Current	V _{CB} =950V, I _E =0	I _{CBO}	--	--	10	uA
Collector-Emitter Saturation Voltage	I _C =1A, I _B =0.2A	V _{CE(SAT)} 1	---	0.15	0.5	V
Collector-Emitter Saturation Voltage	I _C =3.5A, I _B =1A	V _{CE(SAT)} 2	---	1.2	1.5	V
Base-Emitter Saturation Voltage	I _C =3.5A, I _B =1A	V _{BE(SAT)} 1	--	1.0	1.5	V
DC Current Gain	V _{CE} =5V, I _C = 0.1A	h _{FE}	48	70	100	
	V _{CE} =3V, I _C = 0.8A		23	28	50	
Resistive Load Switching Time (Ratings)						
Rise Time	V _{CC} =5V, I _C =0.5A, t _P =300uS,	t _r	--	--	1	uS
Storage Time		t _{STG}	4.5	5	5.5	uS
Fall Time		t _f	--	--	1.2	uS

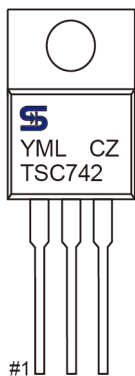
Notes: Pulsed duration = 380 μs , duty cycle $\leq 2\%$

TO-220 Mechanical Drawing



Unit: Millimeters

Marking Diagram



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

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