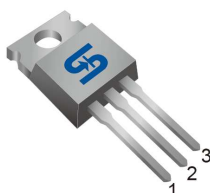




TO-220



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

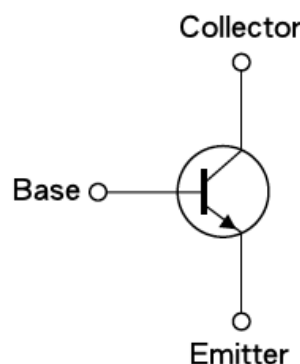
Structure

- Silicon Triple Diffused Type
- NPN Silicon Transistor

Ordering Information

Part No.	Package	Packing
TSC742CZ C0	TO-220	50pcs / Tube

Block Diagram



Absolute Maximum Rating ($T_A = 25^\circ C$, 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 @ $T_c=25^\circ C$	P_{DTOT}	70	W
Maximum Operating Junction Temperature	T_J	+150	$^\circ C$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ C$

Note: Single Pulse. $P_w = 300\mu S$, Duty $\leq 2\%$

Thermal Performance

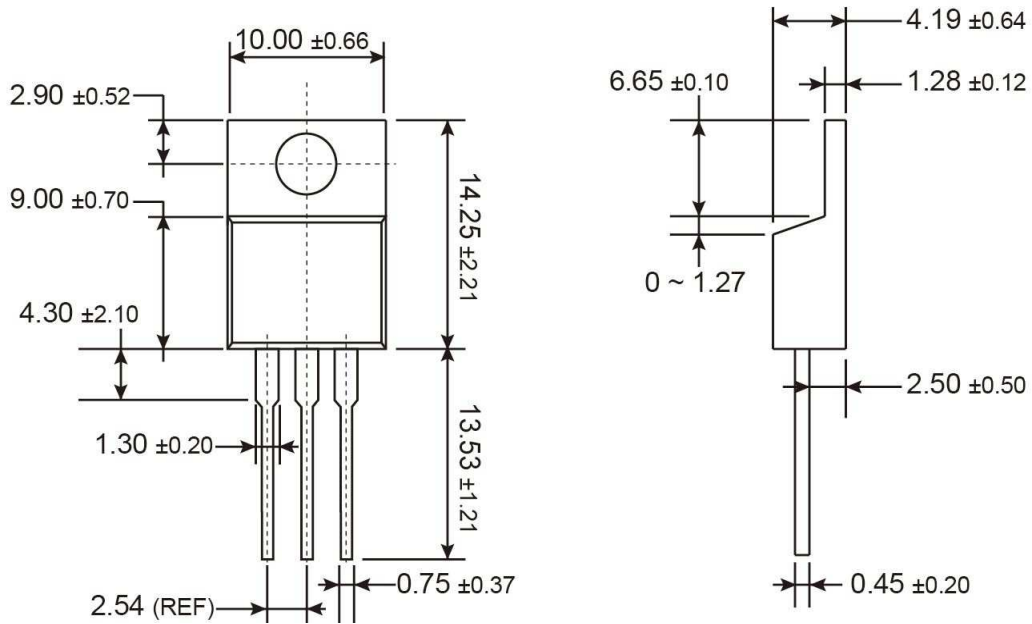
Parameter	Symbol	Limit	Unit
Thermal Resistance - Junction to Case	$R_{\theta_{JC}}$	1.8	$^\circ C/W$
Thermal Resistance - Junction to Ambient	$R_{\theta_{JA}}$	62.5	$^\circ C/W$

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Static						
Collector-Base Voltage	$I_C = 0.5\text{mA}$	BV_{CBO}	1050	--	--	V
Collector-Emitter Breakdown Voltage	$I_C = 5\text{mA}$	BV_{CEO}	420	--	--	V
Emitter-Base Breakdown Voltage	$I_E = 1\text{mA}$	BV_{EBO}	15	--	--	V
Collector Cutoff Current	$V_{CE} = 400\text{V}, I_B = 0$	I_{CEO}	--	10	250	μA
Collector Cutoff Current	$V_{CB} = 950\text{V}, I_E = 0$	I_{CBO}	--	--	10	μA
Collector-Emitter Saturation Voltage	$I_C = 1\text{A}, I_B = 0.2\text{A}$	$V_{CE(SAT)1}$	---	0.15	0.5	V
Collector-Emitter Saturation Voltage	$I_C = 3.5\text{A}, I_B = 1\text{A}$	$V_{CE(SAT)2}$	---	1.2	1.5	V
Base-Emitter Saturation Voltage	$I_C = 3.5\text{A}, I_B = 1\text{A}$	$V_{BE(SAT)1}$	--	1.0	1.5	V
DC Current Gain	$V_{CE} = 5\text{V}, I_C = 0.1\text{A}$	h_{FE}	48	70	100	
	$V_{CE} = 3\text{V}, I_C = 0.8\text{A}$		23	28	50	
Resistive Load Switching Time (Ratings)						
Rise Time	$V_{CC} = 5\text{V}, I_C = 0.5\text{A},$ $t_P = 300\mu\text{S},$	t_r	--	--	1	μS
Storage Time		t_{STG}	4.5	5	5.5	μS
Fall Time		t_f	--	--	1.2	μS

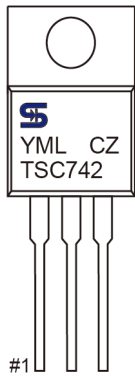
Notes: Pulsed duration = 380 μS , duty cycle $\leq 2\%$

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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