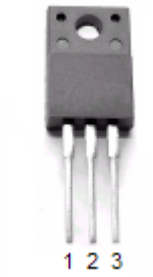
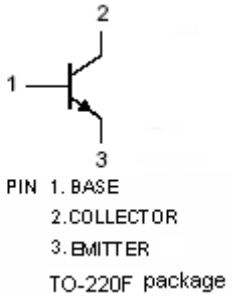
NPN 2SC4550

SILCON EPITAXIAL TRANSISTOR FOR HIGH-SPEED SWITCHING

The 2SC4550 is a power transistor developed for high-speed switching and features low $V_{CE(sat)}$ and high h_{FE}.
This transistor is ideal for use in drivers such as DC/DC converters and actuators.
In addition, a small resin-molded insulation type package contributes to high-density mounting and reduction of cost.
Compliance to RoHS.





ABSOLUTE MAXIMUM RATINGS

Symbol	Ratings		Value	Unit
V_{CEO}	Collector-Emitter Voltage		60	V
V_{CBO}	Collector-Base Voltage		100	V
V_{EBO}	Emitter-Base Voltage		7	V
I_C	Collector Current		7	A
$I_{C(pulse)}$	Collector Current (pulse)		14	A
I_B	Base Current		3.5	A
P_D	Total Power Dissipation	@ T_C = 25°C	30	W
P_D	Total Power Dissipation	@ T_a = 25°C	2	W
T_J	Junction Temperature		150	°C
T_{Stg}	Storage Temperature		-65 to +200	°C

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h_{FE} CLASSIFICATION

Marking	Test Condition(s)	M	L	K
h_{FE2}	I_C = 1.5 A, V_{CE} = 2 V	100 to 200	150 to 300	200 to 400

ELECTRICAL CHARACTERISTICS

TC=25°C unless otherwise noted

Symbol	Ratings		Test Condition(s)	Min	Typ	Max	Unit
V_{CEO}	Collector to Emitter Voltage		I_C = 4 A, I_B = 0.4 A, L = 1 mH	60	-	-	V
V_{CEX}	Collector to Emitter Voltage		I_C = 4 A, I_{B1} = -I_{B2} = 0.4 A $V_{BE(OFF)}$ = -1.5V, L = 180 µH clamped	60	-	-	
I_{CBO}	Collector Cutoff Current		V_{CB} = 60 V, I_E = 0	-	-	10	µA
I_{CER}	Collector Cutoff Current		V_{CE} = 60 V, R_{BE} = 50 Ω T_a = 125°C	-	-	1	mA
I_{CEX}	Collector Cutoff Current		V_{CE} = 60 V, $V_{BE(OFF)}$ = -1.5 V	-	-	10	µA
			V_{CE} = 60 V, $V_{BE(OFF)}$ = -1.5 V T_a = 125°C	-	-	1	mA
I_{EBO}	Emitter Cutoff Current		V_{EB} = 5.0 V, I_C = 0	-	-	10	µA
h_{FE}	DC Current Gain (*)	h_{FE1}	I_C = 0.7 A, V_{CE} = 2 V	100	-	-	-
		h_{FE2}	I_C = 1.5 A, V_{CE} = 2 V	100	200	400	
		h_{FE3}	I_C = 4 A, V_{CE} = 2 V	60	-	-	
$V_{CE(SAT)}$	Collector-Emitter saturation Voltage (*)		I_C = 4 A, I_B = 0.2 A	-	-	0.3	V
			I_C = 6 A, I_B = 0.3 A	-	-	0.5	
$V_{BE(SAT)}$	Base-Emitter saturation Voltage (*)		I_C = 4 A, I_B = 0.2 A	-	-	1.2	
			I_C = 6 A, I_B = 0.3 A	-	-	1.5	
C_{ob}	Collector capacitance		V_{CB} = 10 V, I_E = 0 f = 1.0MHz	-	100	-	pF
f_T	Gain bandwidth product		I_C = 1 A, V_{CE} = 10 V	-	150	-	MHz
t_{on}	Turn-on time		I_C = 4 A, R_L = 12.5 Ω	-	0.1	0.3	µs
t_{stg}	Storage time		I_{B1} = -I_{B2} = 0.2 A, V_{CC} = 50 V	-	1	1.5	
t_f	Fall time		Refer to the test circuit.	-	0.1	0.3	

(*) Pulse conditions : tp < 300 µs, δ =2%

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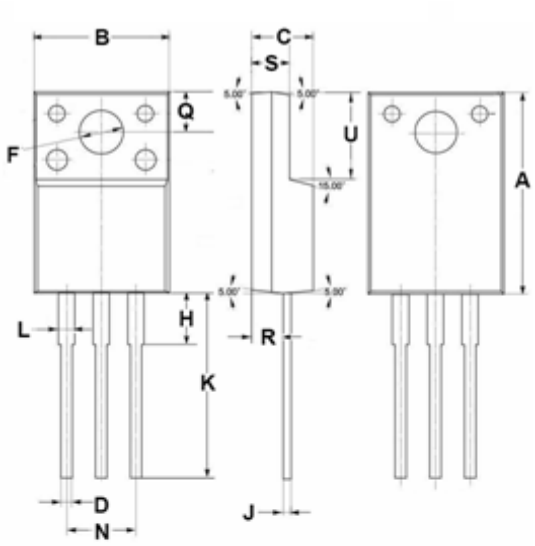
MECHANICAL DATA CASE TO-220



DIM	mm MIN	MAX
A	14.95	15.05
B	10.00	10.10
C	4.40	4.60
D	0.75	0.80
F	3.10	3.30
H	3.70	3.90
J	0.50	0.70
K	13.4	13.6
L	1.10	1.30
N	5.00	5.20
Q	2.70	2.90
R	2.20	2.40
S	2.65	2.85
U	6.40	6.60

Revised August 2012