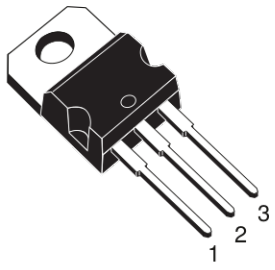
MJE2955T
MJE3055T

COMPLEMENTARY SILICON POWER TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- COMPLEMENTARY PNP - NPN DEVICES

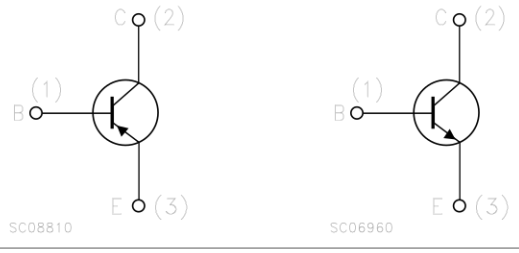
DESCRIPTION

The MJE3055T is a silicon Epitaxial-Base NPN transistor in Jedec TO-220 package. It is intended for power switching circuits and general-purpose amplifiers. The complementary PNP type is MJE2955T.



TO-220

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter		Value	Unit
		NPN	MJE3055T	
		PNP	MJE2955T	
V_{CEO}	Collector-Emitter Voltage (I_B = 0)		60	V
V_{CBO}	Collector-Base Voltage (I_E = 0)		70	V
V_{EBO}	Emitter-Base Voltage (I_C = 0)		5	V
I_C	Collector Current		10	A
I_B	Base Current		6	A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25\ ^oC$		75	W
T_{stg}	Storage Temperature		-55 to 150	^oC
T_j	Max. Operating Junction Temperature		150	^oC

For PNP types voltage and current values are negative.

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	1.66	°C/W

ELECTRICAL CHARACTERISTICS (T_{case} = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = 30 V			700	µA
I_{CEX}	Collector Cut-off Current (V_{BE} = 1.5V)	V_{CE} = 70 V T_{case} = 150°C			1 5	mA mA
I_{CBO}	Collector Cut-off Current (I_E = 0)	V_{CBO} = 70 V T_{case} = 150°C			1 10	mA mA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	V_{EBO} = 5 V			5	mA
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage (I_B = 0)	I_C = 200 mA	60			V
$V_{CE(sat)}$*	Collector-Emitter Sustaining Voltage	I_C = 4 A I_B = 0.4 A I_C = 10 A I_B = 3.3 A			1.1 8	V V
$V_{BE(on)}$*	Base-Emitter on Voltage	I_C = 4 A V_{CE} = 4 V			1.8	V
h_{FE}	DC Current Gain	I_C = 4 A V_{CE} = 4 V I_C = 10 A V_{CE} = 4 V	20 5		70	
f_T	Transistor Frequency	I_C = 500 mA V_{CE} = 10 V f = 500 KHz	2			MHz

*Pulsed: Pulse duration = 300µs, duty cycle ≤ 2 %
For PNP type voltage and current values are negative.

TO-220 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	4.40		4.60	0.173		0.181
C	1.23		1.32	0.048		0.052
D	2.40		2.72	0.094		0.107
E	0.49		0.70	0.019		0.027
F	0.61		0.88	0.024		0.034
F1	1.14		1.70	0.044		0.067
F2	1.14		1.70	0.044		0.067
G	4.95		5.15	0.194		0.202
G1	2.40		2.70	0.094		0.106
H2	10.00		10.40	0.394		0.409
L2		16.40			0.645	
L4	13.00		14.00	0.511		0.551
L5	2.65		2.95	0.104		0.116
L6	15.25		15.75	0.600		0.620
L7	6.20		6.60	0.244		0.260
L9	3.50		3.93	0.137		0.154
M		2.60			0.102	
DIA.	3.75		3.85	0.147		0.151