

## NPN Epitaxial Silicon Transistor

### 1 Description

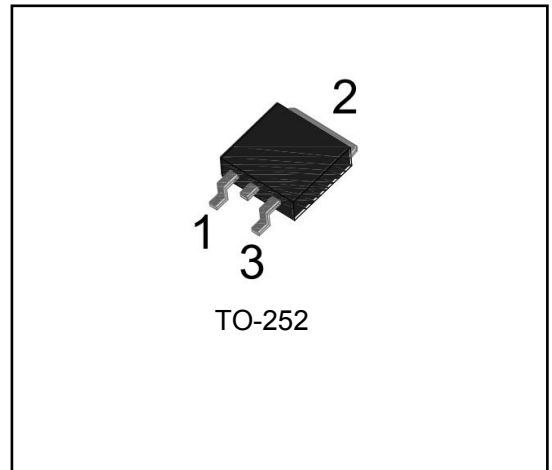
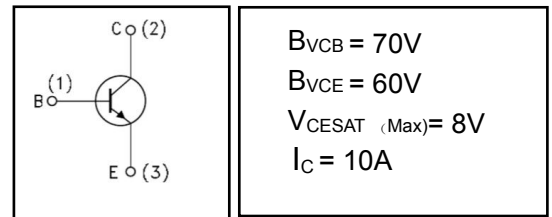
Designed for General Purpose Amplifier and Low Speed Switching Applications. Electrically Similar to MJE3055

### 2 Features

- High current output up to 10A
- Low saturation voltage

### 3 Applications

- voltage regulator
- medium power linear
- Switching



## 4 Electrical Characteristics

### 4.1 Absolute Maximum Ratings (Tc=25°C, unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	$V_{CBO}$	70	V
Collector-Emitter Voltage	$V_{CEO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current (DC)	$I_C$	10	A
*Collector Current (Pulse)	$I_{CP}$	15	A
Base Current (DC)	$I_B$	6	A
Collector Dissipation (TC=25°C)	$P_C$	20	W
Collector Dissipation (Ta=25°C)		1.75	W
Junction Temperature	$T_J$	150	°C
Storage Temperature	$T_{STG}$	- 55 ~ 150	°C

\* PW≤10ms, Duty Cycle≤50%

### 4.2 Thermal Characteristics

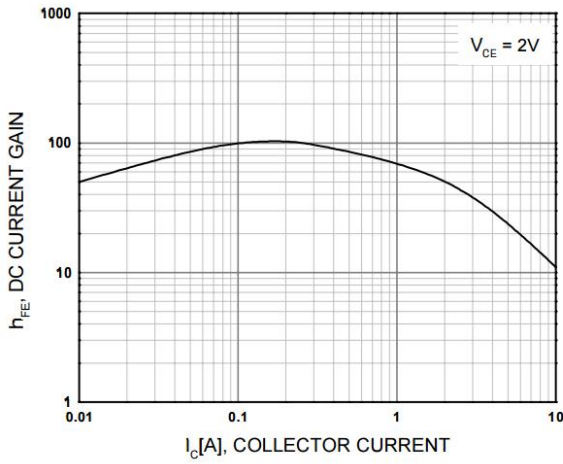
PARAMETER	SYMBOL	VALUE	UNIT
Thermal Resistance, Junction to Case-sink	$R_{thJC}$	6.25	°C/W

**4.3 Electrical Characteristics** (Tc=25°C, unless otherwise noted)

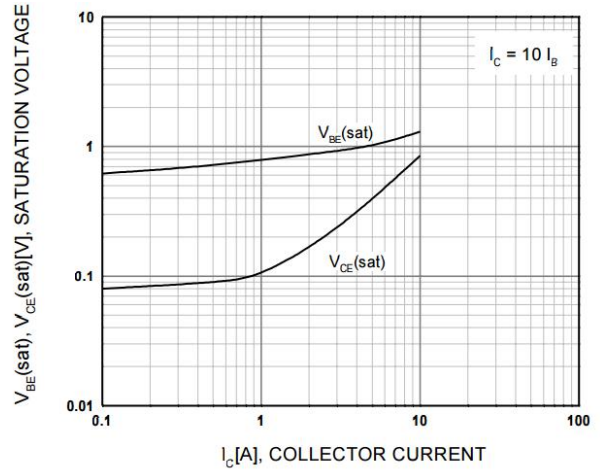
SYMBOL	PARAMETER	Test Conditions	Min	Typ	Max	Unit
I <sub>CEs</sub>	Collector Cut-off Current (V <sub>BE</sub> = 0)	V <sub>CE</sub> =70V	-	-	100	uA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> =60V	-	-	100	uA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	V <sub>EB</sub> =5V	-	-	100	uA
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage (I <sub>B</sub> = 0)	I <sub>C</sub> =10mA	60	-	-	V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage (I <sub>E</sub> = 0)	I <sub>C</sub> =100uA	70	-	-	V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>C</sub> = 0)	I <sub>E</sub> =100uA	5	-	-	V
V <sub>CE(sat)*</sub>	Collector-Emitter Saturation Voltage	I <sub>C</sub> =1A I <sub>B</sub> =100mA	-	-	0.8	V
		I <sub>C</sub> =4A I <sub>B</sub> =400mA	-	-	1.1	
		I <sub>C</sub> =10A I <sub>B</sub> =3.3A	-	-	8	
V <sub>BE(sat)*</sub>	Base-Emitter Saturation Voltage	I <sub>C</sub> =4A I <sub>B</sub> =400mA	-	-	1.5	
V <sub>BE(on)*</sub>	Base-Emitter Voltage	I <sub>C</sub> =4A V <sub>CE</sub> = 4 V	-	-	1.8	V
h <sub>FE</sub>	DC Current Gain	I <sub>C</sub> =1A, V <sub>CE</sub> =5V	30	-	-	
		I <sub>C</sub> =4A, V <sub>CE</sub> =5 V	20	-	-	
		I <sub>C</sub> =10A, V <sub>CE</sub> =5 V	10	-	-	
f <sub>T</sub>	Transition Frequency	V <sub>CE</sub> =10V, I <sub>C</sub> =500mA, f=10MHZ	2	-	-	MHZ

\*Pulse Test: PW≤300μs, Duty Cycle≤2%

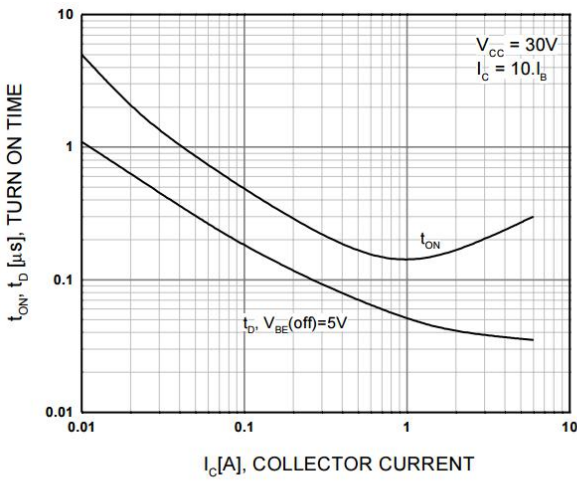
**5 Typical characteristics diagrams**



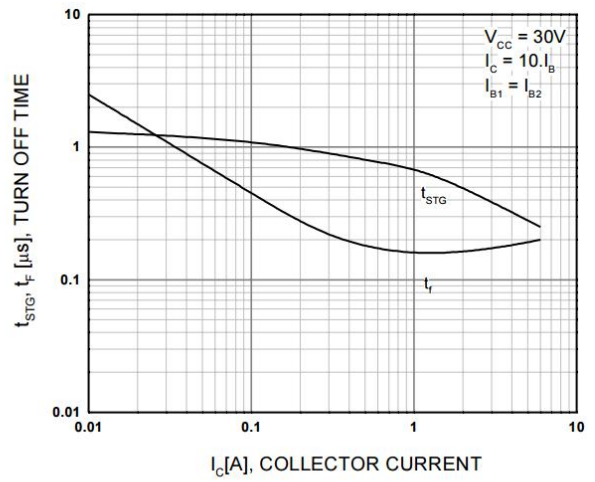
**Figure 1. DC current Gain**



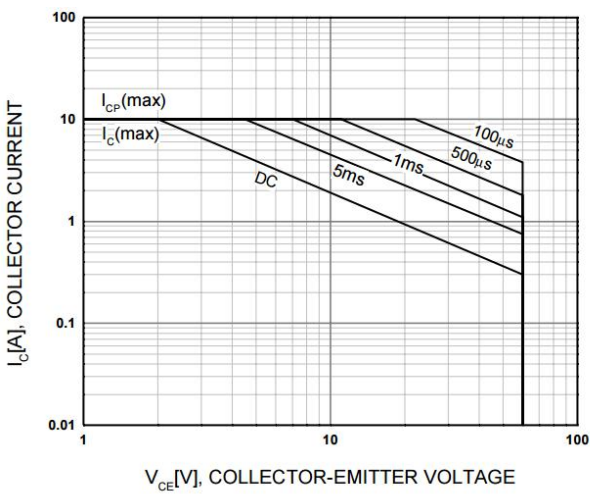
**Figure 2. Base-Emitter Saturation Voltage  
Collector-Emitter Saturation Voltage**



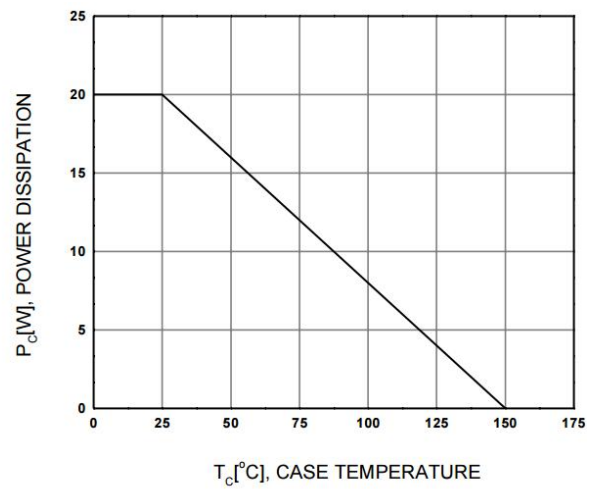
**Figure 3. Turn On Time**



**Figure 4. Turn Off Time**



**Figure 5. Safe Operating Area**



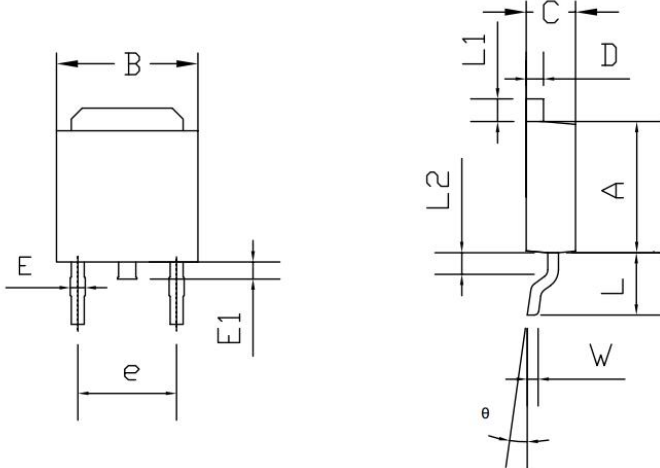
**Figure 6. Power Derating**

## 6 Product Specifications and Packaging Models

Product Model	Package Type	Mark Name	RoHS	Package	Quantity
MJD3055	TO-252	MJD3055	Pb-free	Braid	3000//A reel

## 7 Dimensions

TO-252 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	min.	max.	min.	max.
A	5.70	6.30	0.224	0.248
B	6.30	6.90	0.248	0.272
C	2.05	2.55	0.081	0.100
D	0.70	0.90	0.028	0.035
E	0.40	0.60	0.016	0.024
E1	0.60	1.00	0.024	0.039
e	4.50	4.65	0.177	0.183
L	2.75	3.05	0.108	0.120
L1	0.75	1.15	0.030	0.045
L2	0.75	1.25	0.030	0.049
W	0.40	0.60	0.016	0.024
$\theta$	0	8	0	8

## 8 Attentions

- ROUM Semiconductor Technology CO.,LTD. reserves the right to change the specification without prior notice! The customer should obtain the latest version of the information before making the order and verify that the information is complete and up to date.
- It is the responsibility of the purchaser for any failure or failure of any semiconductor product under certain conditions. It is the responsibility of the purchaser to comply with safety standards and to take safety measures in the system design and machine manufacturing of Roma products in order to avoid potential risk of failure. Injury or property damage.
- Product promotion is endless, our company will be dedicated to provide customers with better products.

## 9 Appendix

Revision history:

Date	REV.	Description	Page
2017.08.11	1.0	Original	