

## FEATURES

- | High DC Current Gain

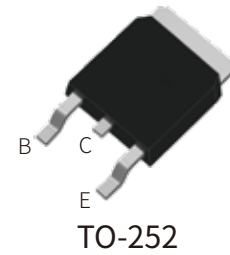
---

- | Electrically Similar to Popular TIP127

---

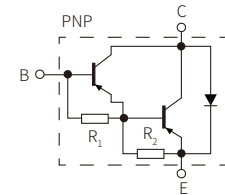
- | Built-in a Damper Diode at E-C

---

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003



$R_1$  typ. =5K $\Omega$ ,  $R_2$  typ. =210 $\Omega$

Schematic Symbol

## MAXIMUM RATINGS (T<sub>A</sub>=25°C)

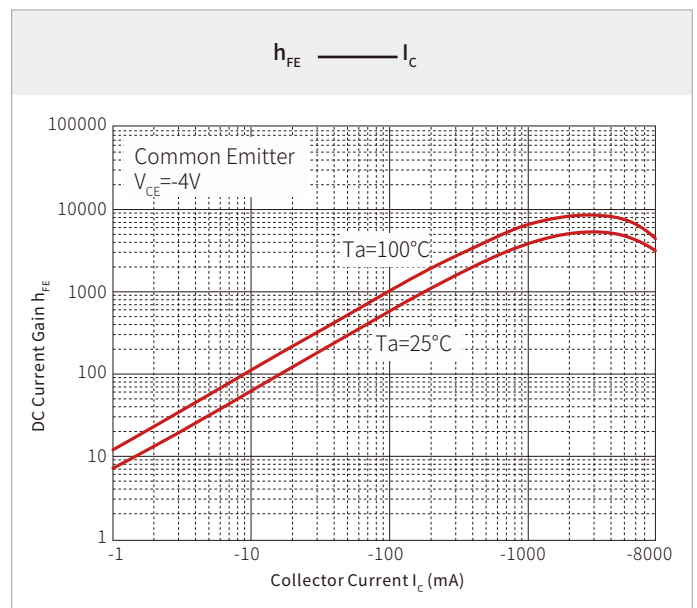
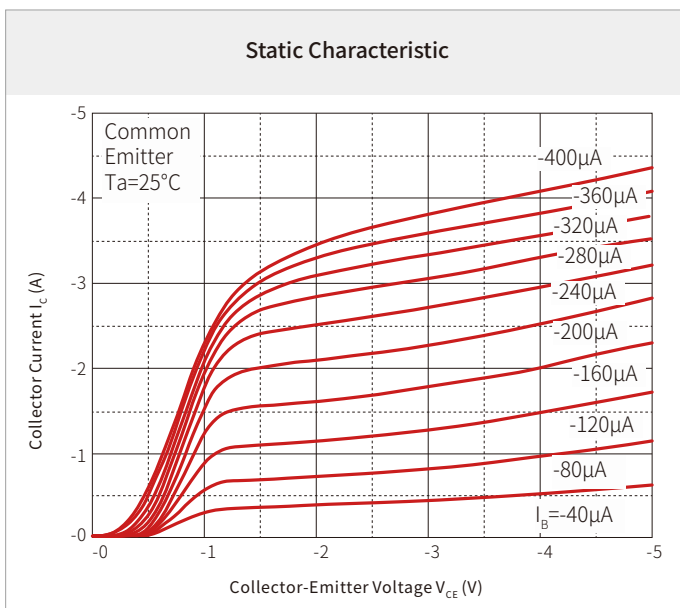
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V <sub>CBO</sub>	-100	V
Collector-Emitter Voltage	V <sub>CEO</sub>	-100	
Emitter-Base Voltage	V <sub>EBO</sub>	-5	
Collector Current -Continuous	I <sub>C</sub>	-8	A
Collector Power Dissipation	P <sub>C</sub>	1.5	W
Thermal Resistance From Junction To Ambient	R <sub>θJA</sub>	83.3	°C/W
Storage Operation Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~+150	°C

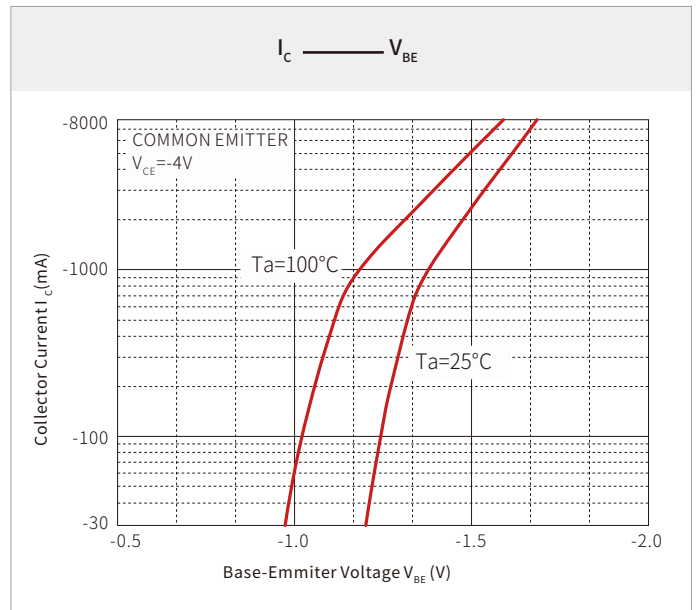
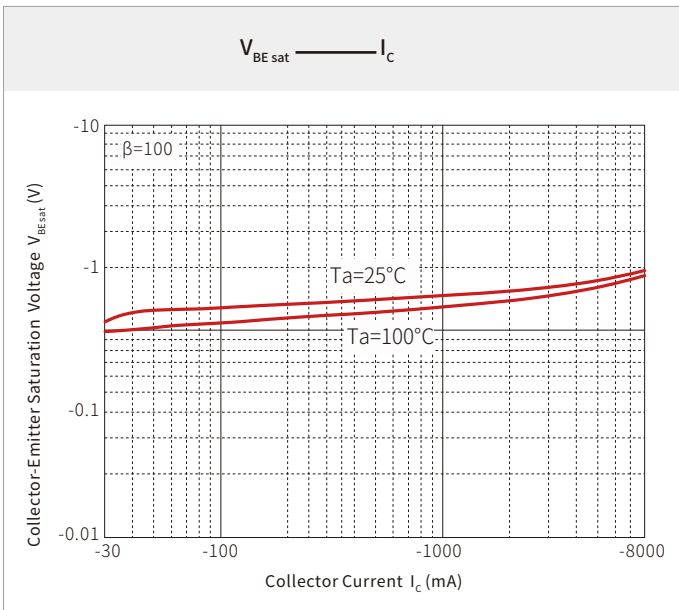
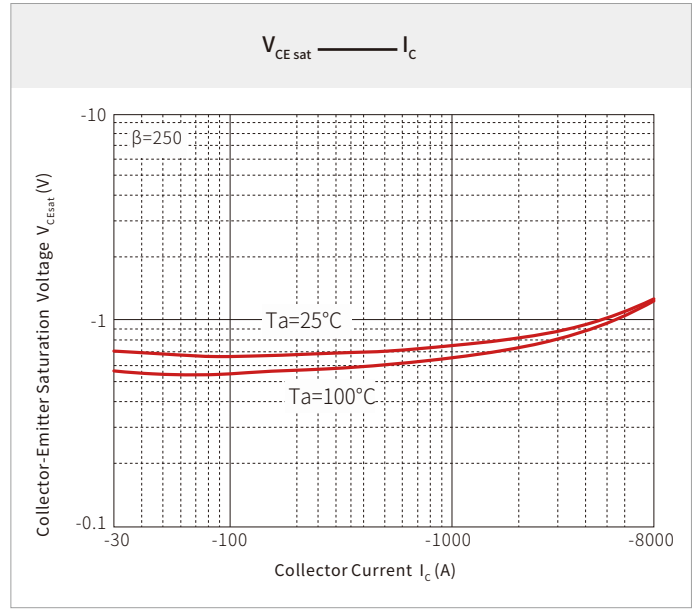
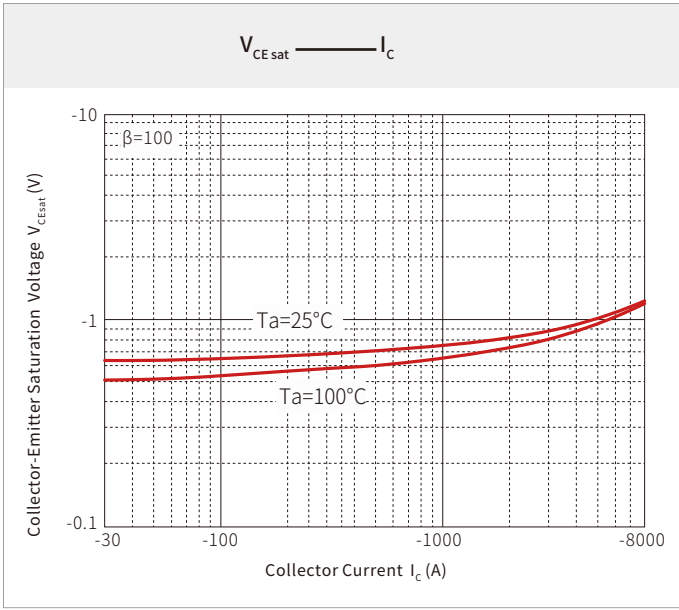
## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

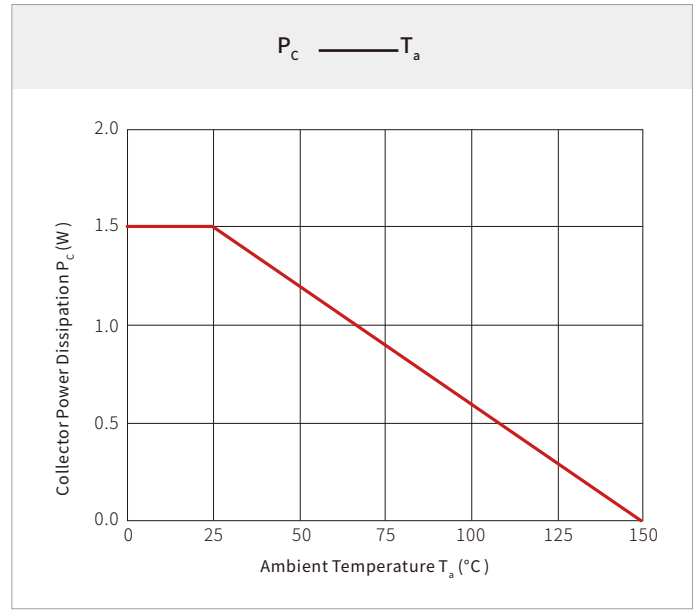
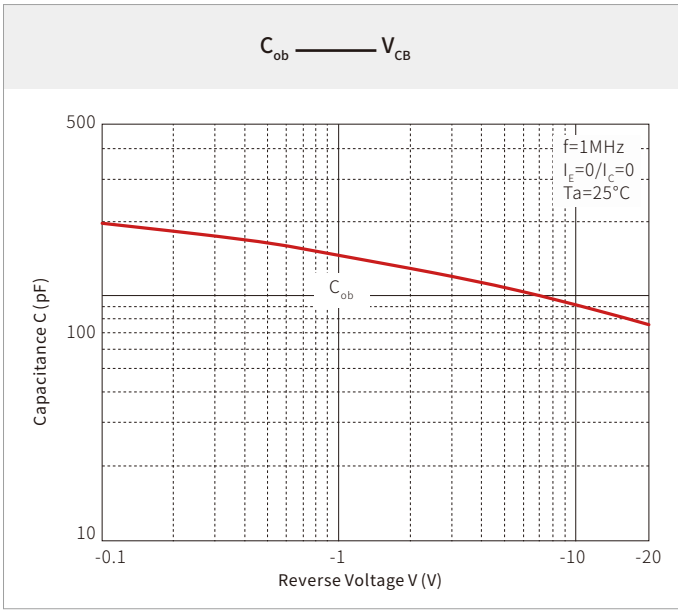
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =-1mA, I <sub>E</sub> =0	-100			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =-30mA, I <sub>B</sub> =0	-100			
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =-10mA, I <sub>C</sub> =0	-5			
Collector cut-off current	I <sub>CEO</sub>	V <sub>CE</sub> =-50V, I <sub>B</sub> =0			-10	μA
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> =-100V, I <sub>E</sub> =0			-10	
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> =-5V, I <sub>C</sub> =0			-2	mA
DC current gain	h <sub>FE(1)</sub>	V <sub>CE</sub> =-4V, I <sub>C</sub> =-4A	1000		12000	
	h <sub>FE(1)</sub>	V <sub>CE</sub> =-4V, I <sub>C</sub> =-8A	100			
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> =-4A, I <sub>B</sub> =-16mA			-2	V
	V <sub>CE(sat)</sub>	I <sub>C</sub> =-8A, I <sub>B</sub> =-80mA			-4	V
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> =-8A, I <sub>B</sub> =-80mA			-4.5	V
Base-emitter voltage*	V <sub>BE</sub>	V <sub>CE</sub> =-4V, I <sub>C</sub> =-4A			-2.8	V
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =-10V, I <sub>E</sub> =0, f=0.1MHz			300	pF

\*Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

## TYPICAL CHARACTERISTICS

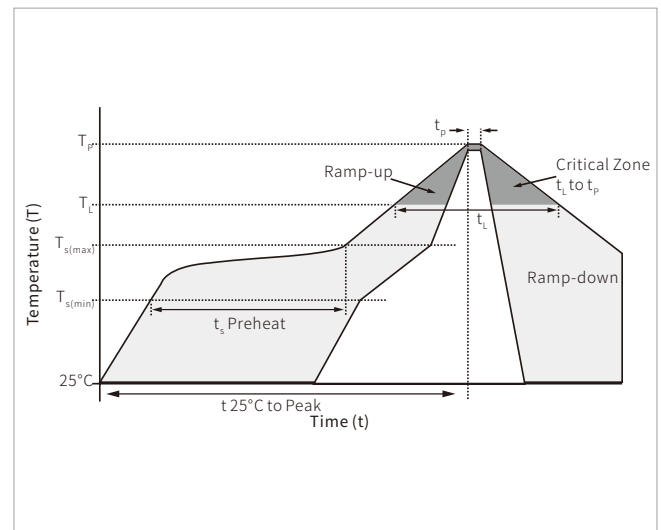




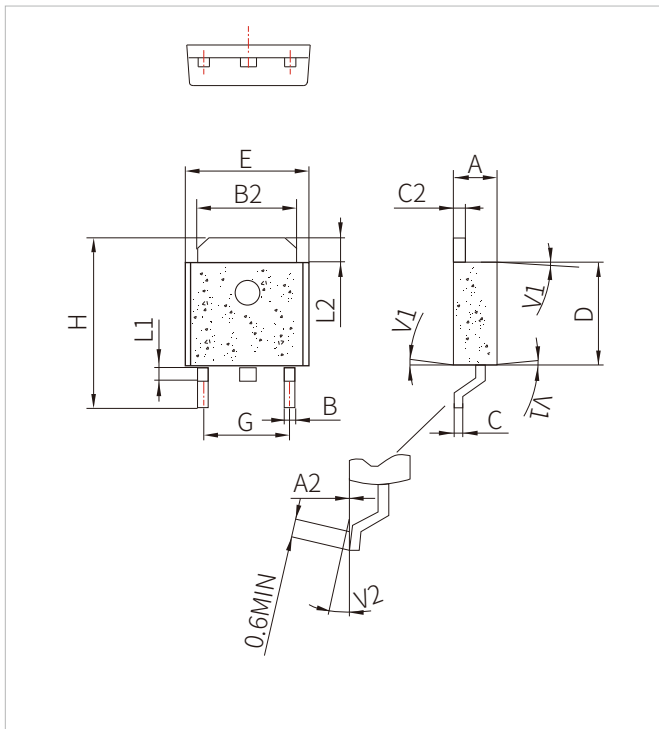


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(\min)}$ )	150 $^\circ\text{C}$
	Temperature Max ( $T_{s(\max)}$ )	200 $^\circ\text{C}$
	Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3 $^\circ\text{C}/\text{second}$ max
$T_{s(\max)}$ to $T_L$ - Ramp-up Rate		3 $^\circ\text{C}/\text{second}$ max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217 $^\circ\text{C}$
	Time (min to max) ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260 $^\circ\text{C}$
Time within 5 $^\circ\text{C}$ of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6 $^\circ\text{C}/\text{second}$ max
Time 25 $^\circ\text{C}$ to peak Temperature ( $T_p$ )		8 minutes max.
Do not exceed		260 $^\circ\text{C}$



## TO-252 PACKAGE MECHANICAL DATA



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.10		2.50	0.083		0.098
A2	0.03		0.23	0.001		0.009
B	0.55		0.65	0.022		0.026
B2	5.10		5.40	0.200		0.213
C	0.45		0.62	0.018		0.024
C2	0.48		0.62	0.019		0.024
D	6.00		6.20	0.236		0.244
E	6.40		6.80	0.252		0.268
G	4.40		4.70	0.173	0.1	0.185
H	9.35		10.7	0.368		0.421
L1	1.30		1.70	0.051	0.143	0.067
L2	1.37		1.50	0.054		0.059
V1		4°			0.130	
V2	0°		8°	0°		8°

## ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
MJD127	TO-252	 MJD127 XXXX	2500PCS	13"

**Headquarters**

No.3387 Shendu Road  
Pujiang I&E Park  
Minhang Shanghai China  
201000

**Hotline**

400-021-5756

**Web**

<https://www.semiware.com>

**Sales Center**

Tel: 86-21-3463-7458  
Email: [sales18@semiware.com](mailto:sales18@semiware.com)

**Customer Service**

Tel: 86-21-5484-1001  
Email: [sales17@semiware.com](mailto:sales17@semiware.com)

**Technical Support**

Tel: 86-21-3463-7654  
Email: [fae01@semiware.com](mailto:fae01@semiware.com)

**Complaint & Suggestions**

Tel: 86-21-3463-7172  
Ext: 8868  
Email: [cs03@semiware.com](mailto:cs03@semiware.com)

**By QR Code**

Website



Wechat

To find your local partner within Semiware' s global website: [www.semiware.com](http://www.semiware.com)

© 2022 Semiware Semiconductor Inc.

The content of this document has been carefully checked and understood. However, neither Semiware nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiware does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiware. Latest publications and a complete disclaimer can be downloaded from the Semiware website. All trademarks recognized.