



2SA1552/2SC4027

Bipolar Transistor

(-160V, (-)1.5A, Low $V_{CE(sat)}$ (PNP)NPN Single TP/TP-FA

ON Semiconductor®

<http://onsemi.com>

Applications

- Converters, inverters, color TV audio output

Features

- Adoption of FBET, MBIT processes
- High voltage and large current capacity
- Ultrahigh-speed switching
- Small and slim package permitting 2SA1552 / 2SC4027-applied sets to be made more compact

Specifications () : 2SA1552

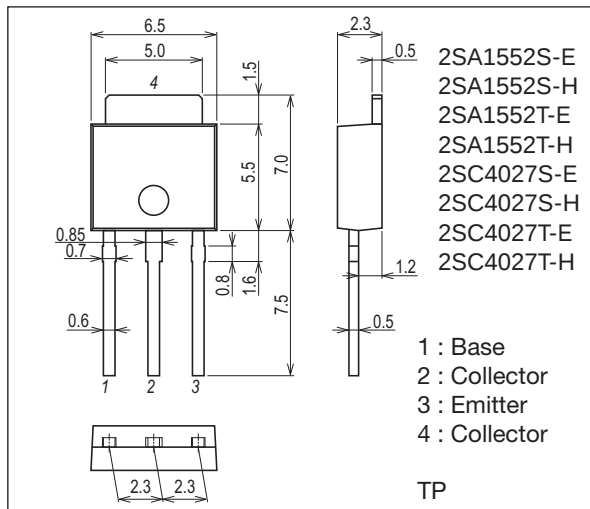
Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Collector to Base Voltage	V_{CBO}		(-)180	V
Collector to Emitter Voltage	V_{CEO}		(-)160	V
Emitter to Base Voltage	V_{EBO}		(-)6	V
Collector Current	I_C		(-)1.5	A
Collector Current (Pulse)	I_{CP}		(-)2.5	A

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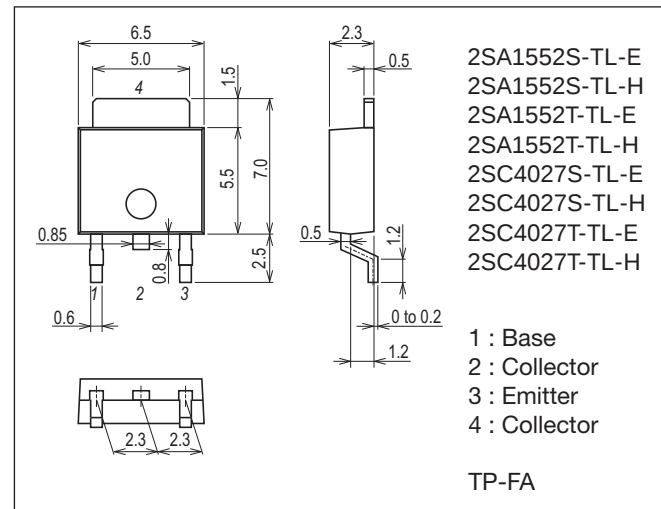
Package Dimensions unit : mm (typ)

7518-003



Package Dimensions unit : mm (typ)

7003-003

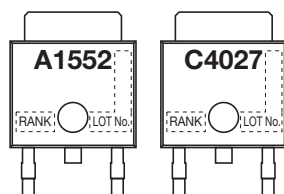


Product & Package Information

- Package : TP
- JEITA, JEDEC : SC-64, TO-251
- Minimum Packing Quantity : 500 pcs./bag

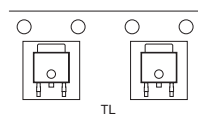
Marking

(TP, TP-FA)

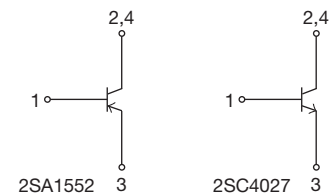


- Package : TP-FA
- JEITA, JEDEC : SC-63, TO-252
- Minimum Packing Quantity : 700 pcs./reel

Packing Type (TP-FA) : TL



Electrical Connection



2SA1552 / 2SC4027

Continued from preceding page.

Parameter	Symbol	Conditions	Ratings	Unit
Collector Dissipation	P_C		1	W
		$T_C=25^{\circ}\text{C}$	15	W
Junction Temperature	T_j		150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}		-55 to +150	$^{\circ}\text{C}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

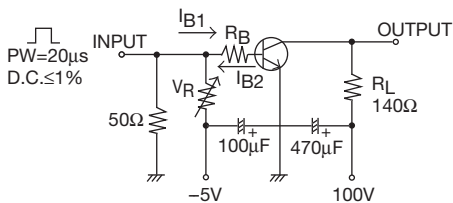
Electrical Characteristics at $T_a=25^{\circ}\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	$V_{CB}=(-)120\text{V}$, $I_E=0\text{A}$			$(-)\text{1.0}$	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=(-)4\text{V}$, $I_C=0\text{A}$			$(-)\text{1.0}$	μA
DC Current Gain	h_{FE1}	$V_{CE}=(-)5\text{V}$, $I_C=(-)100\text{mA}$	140*		400*	
	h_{FE2}	$V_{CE}=(-)5\text{V}$, $I_C=(-)10\text{mA}$	80			
Gain-Bandwidth Product	f_T	$V_{CE}=(-)10\text{V}$, $I_C=(-)50\text{mA}$		120		MHz
Output Capacitance	C_{ob}	$V_{CB}=(-)10\text{V}$, $f=1\text{MHz}$		(22)12		pF
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=(-)500\text{mA}$, $I_B=(-)50\text{mA}$		$(-0.2)\text{0.13}$	$(-0.5)\text{0.45}$	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=(-)500\text{mA}$, $I_B=(-)50\text{mA}$		$(-)\text{0.85}$	$(-)\text{1.2}$	V
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=(-)10\mu\text{A}$, $I_E=0\text{A}$	$(-)\text{180}$			V
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=(-)1\text{mA}$, $R_{BE}=\infty$	$(-)\text{160}$			V
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=(-)10\mu\text{A}$, $I_C=0\text{A}$	$(-)\text{6}$			V
Turn-On Time	t_{on}	See specified Test Circuit.		60		ns
Storage Time	t_{stg}			(0.7)1.2		μs
Fall Time	t_f			(50)80		ns

* : The 2SA1552 / 2SC4027 are classified by 100mA h_{FE} as follows : (unit : μA)

Rank	S	T
h_{FE}	140 to 280	200 to 400

Switching Time Test Circuit

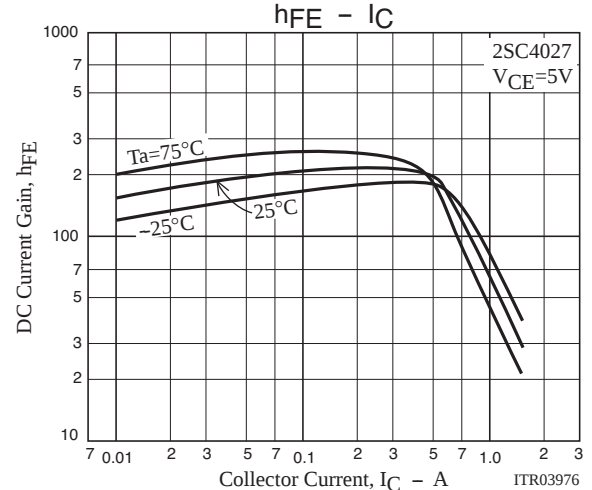
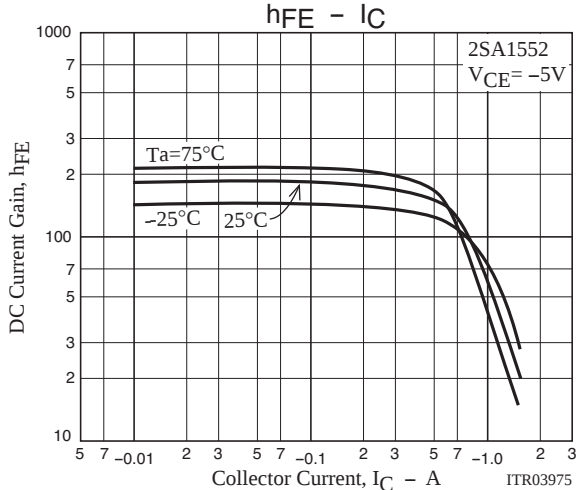
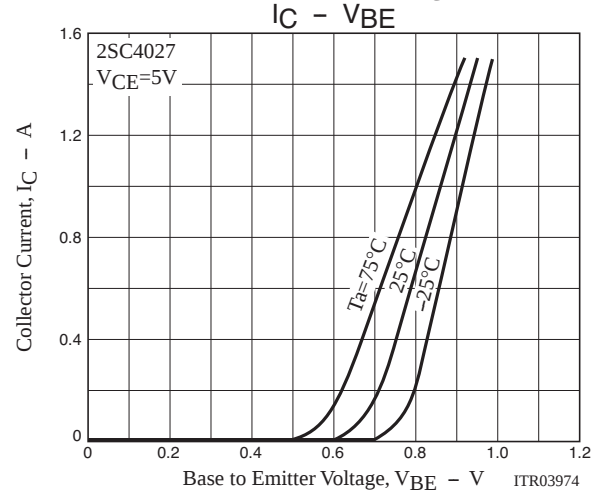
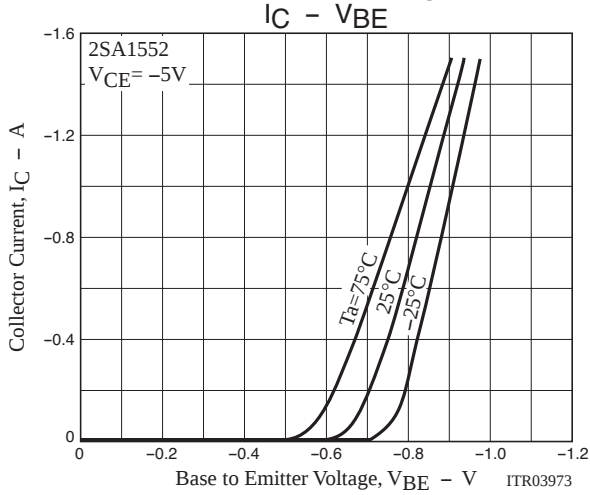
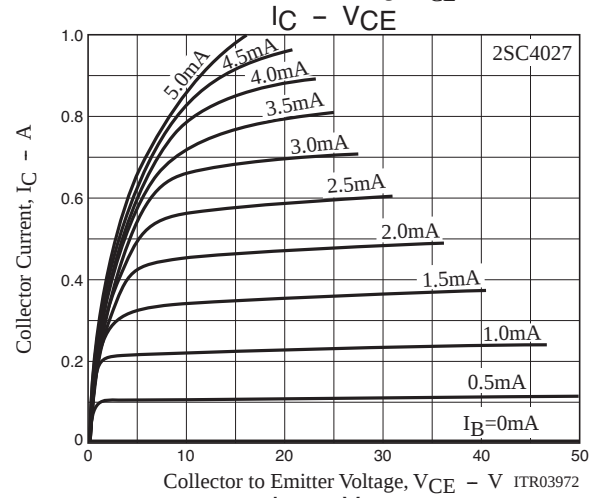
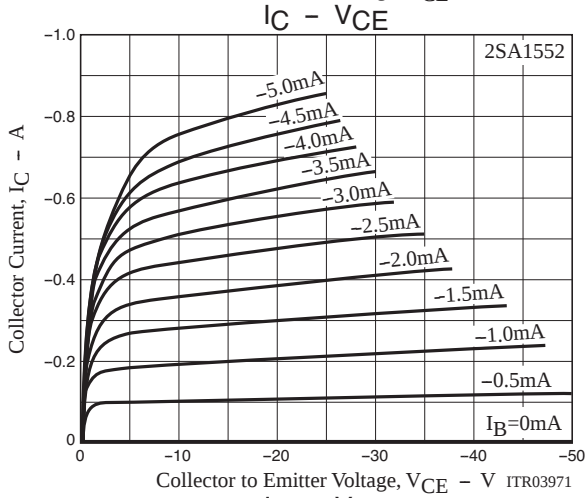
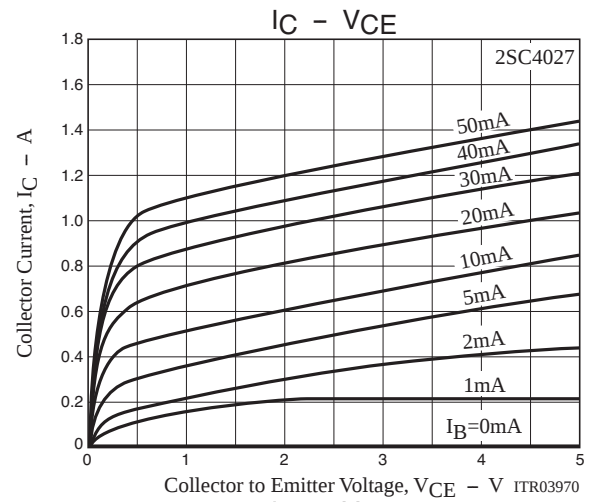
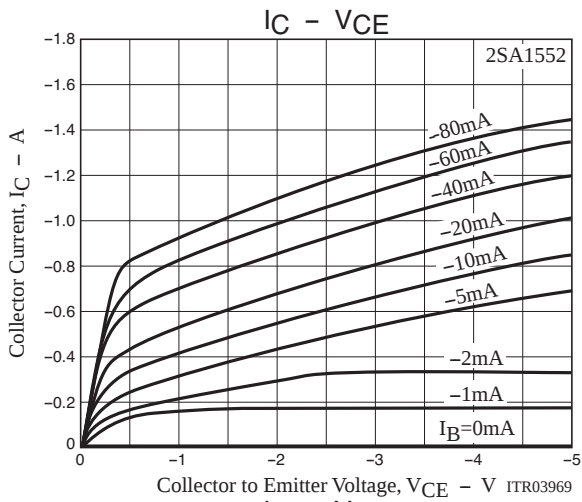


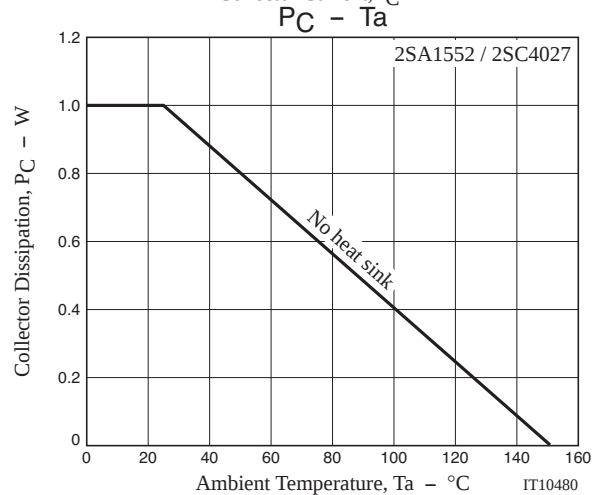
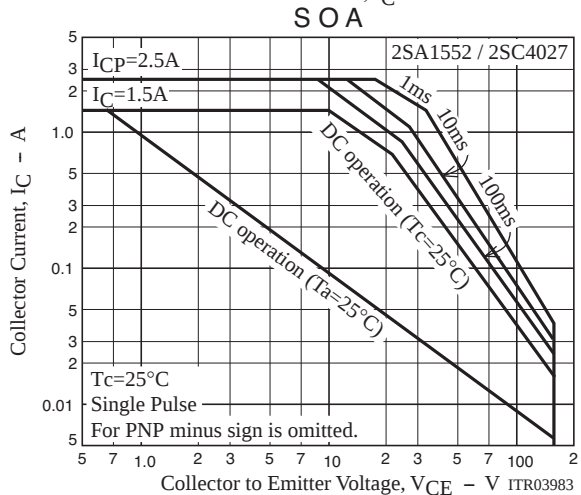
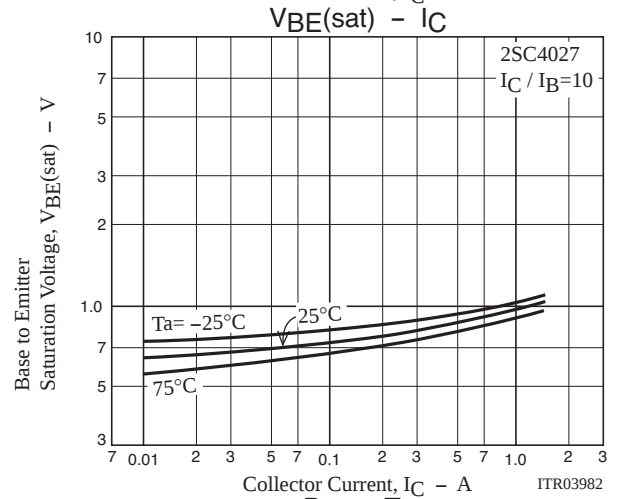
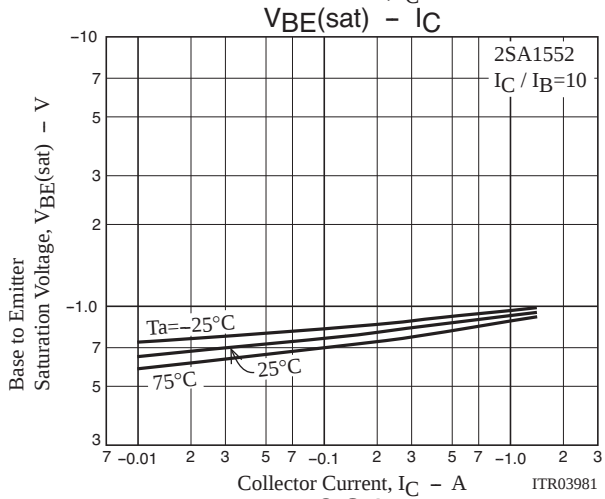
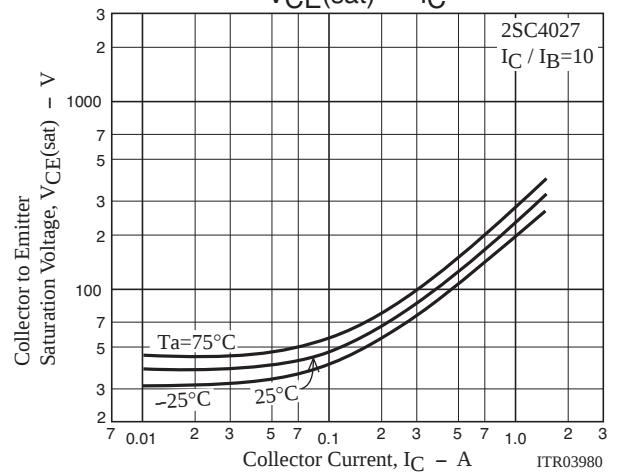
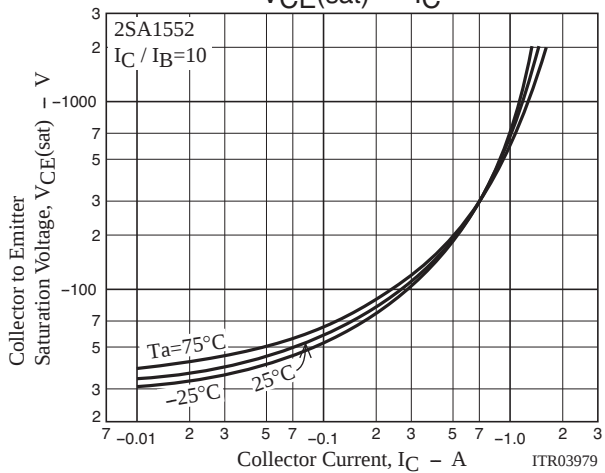
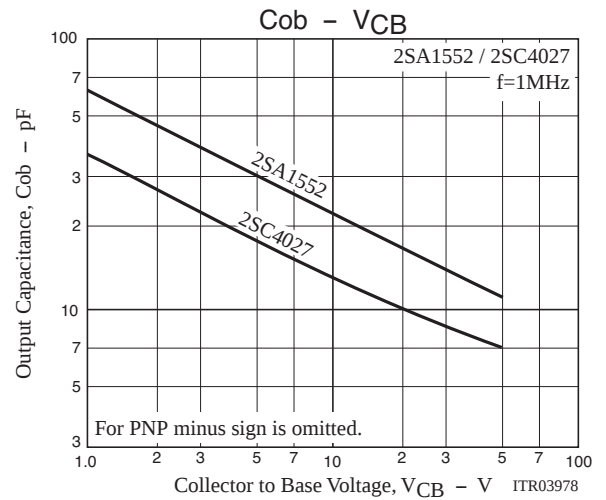
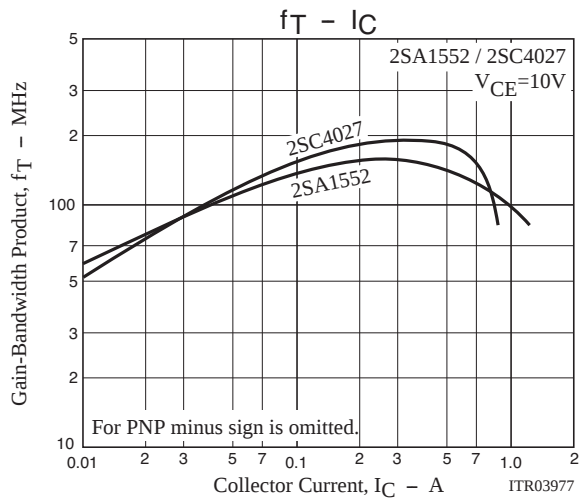
$$10I_{B1} = -10I_{B2} = I_C = 0.7\text{A}$$

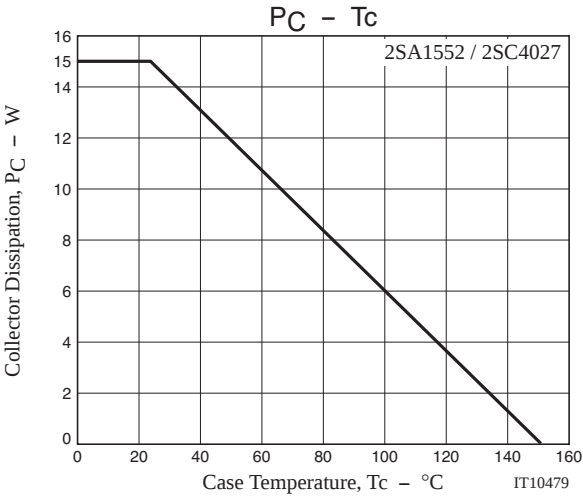
For PNP, the polarity is reversed.

Ordering Information

Device	Package	Shipping	memo
2SA1552S-E	TP	500pcs./bag	Pb Free
2SA1552S-H	TP	500pcs./bag	Pb Free and Halogen Free
2SA1552T-E	TP	500pcs./bag	Pb Free
2SA1552T-H	TP	500pcs./bag	Pb Free and Halogen Free
2SC4027S-E	TP	500pcs./bag	Pb Free
2SC4027S-H	TP	500pcs./bag	Pb Free and Halogen Free
2SC4027T-E	TP	500pcs./bag	Pb Free
2SC4027T-H	TP	500pcs./bag	Pb Free and Halogen Free
2SA1552S-TL-E	TP-FA	700pcs./reel	Pb Free
2SA1552S-TL-H	TP-FA	700pcs./reel	Pb Free and Halogen Free
2SA1552T-TL-E	TP-FA	700pcs./reel	Pb Free
2SA1552T-TL-H	TP-FA	700pcs./reel	Pb Free and Halogen Free
2SC4027S-TL-E	TP-FA	700pcs./reel	Pb Free
2SC4027S-TL-H	TP-FA	700pcs./reel	Pb Free and Halogen Free
2SC4027T-TL-E	TP-FA	700pcs./reel	Pb Free
2SC4027T-TL-H	TP-FA	700pcs./reel	Pb Free and Halogen Free



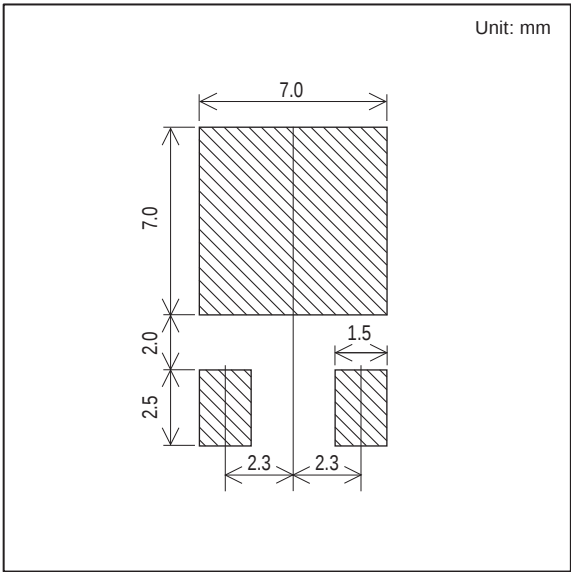
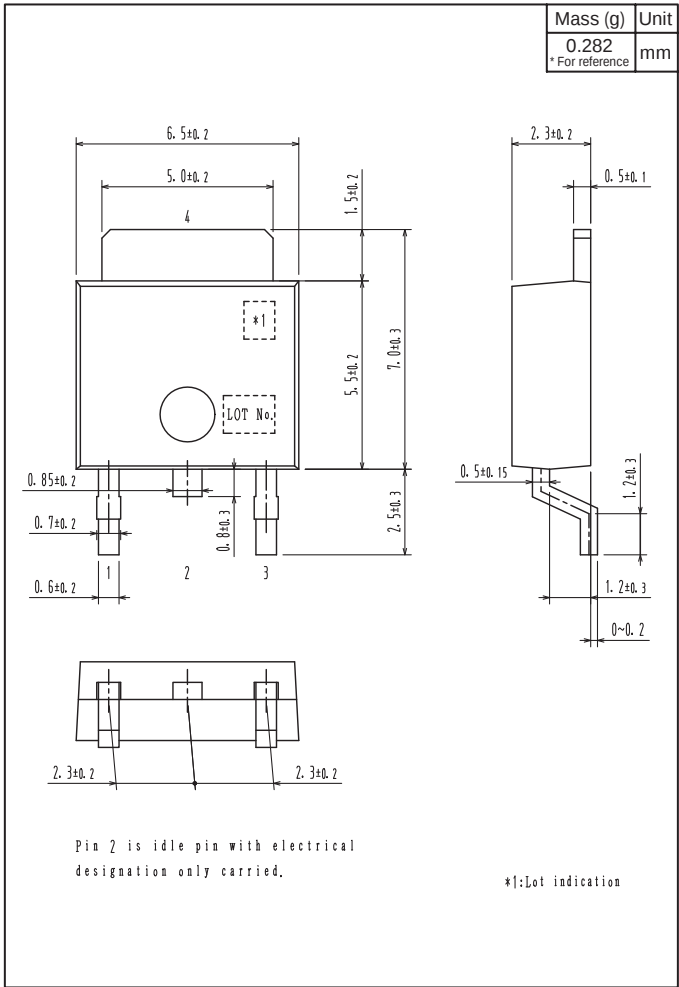




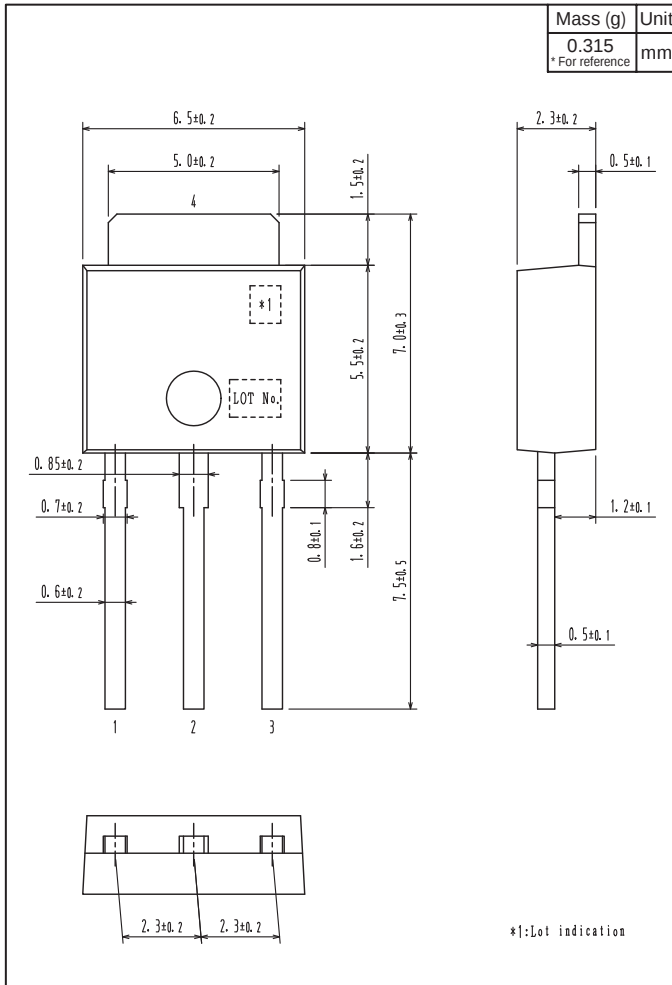
Outline Drawing

Land Pattern Example

2SA1552S-TL-E, 2SA1552S-TL-H, 2SA1552T-TL-E, 2SA1552T-TL-H, 2SC4027S-TL-E, 2SC4027S-TL-H, 2SC4027T-TL-E, 2SC4027T-TL-H



2SA1552S-E, 2SA1552S-H, 2SA1552T-E, 2SA1552T-H, 2SC4027S-E, 2SC4027S-H, 2SC4027T-E, 2SC4027T-H



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