

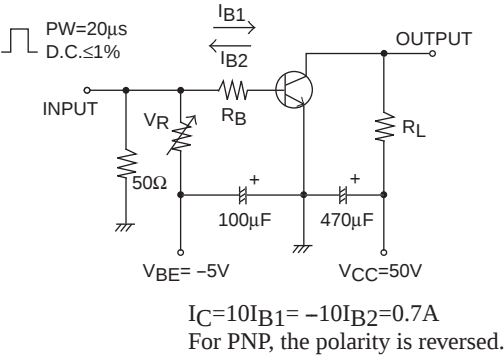
Electrical Characteristics at Ta=25°C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	ICBO	V _{CB} =(-)100V, I _E =0A			(-)100	nA
Emitter Cutoff Current	IEBO	V _{EB} =(-)4V, I _C =0A			(-)100	nA
DC Current Gain	h _{FE}	V _{CE} =(-)5V, I _C =(-)100mA	100*		400*	
Gain-Bandwidth Product	f _T	V _{CE} =(-)10V, I _C =(-)100mA		120		MHz
Output Capacitance	Cob	V _{CB} =(-)10V, f=1MHz		(25)16		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =(-)1A, I _B =(-)100mA		(-0.22)0.13	(-0.6)0.4	V
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =(-)1A, I _B =(-)100mA		(-)0.85	(-)1.2	V
Collector-to-Base Breakdown Voltage	V _{(BR)CBO}	I _C =(-)10μA, I _E =0A	(-)120			V
Collector-to-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C =(-)1mA, R _{BE} =∞	(-)100			V
Emitter-to-Base Breakdown Voltage	V _{(BR)EBO}	I _E =(-)10μA, I _C =0A	(-)6			V
Turn-On Time	t _{on}	See specified Test Circuit.		(80)80		ns
Storage Time	t _{stg}			(750)1000		ns
Fall Time	t _f			(40)50		ns

* : The 2SA1417 / 2S3647 are classified by 100mA h_{FE} as follows :

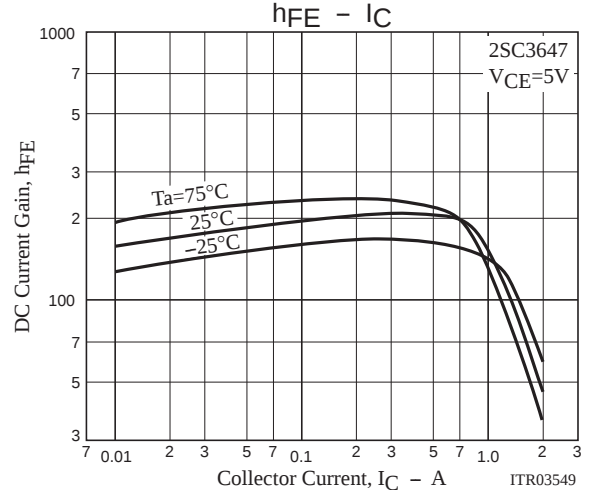
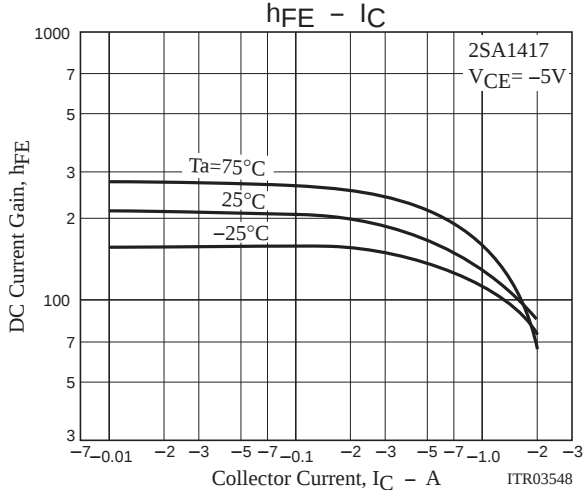
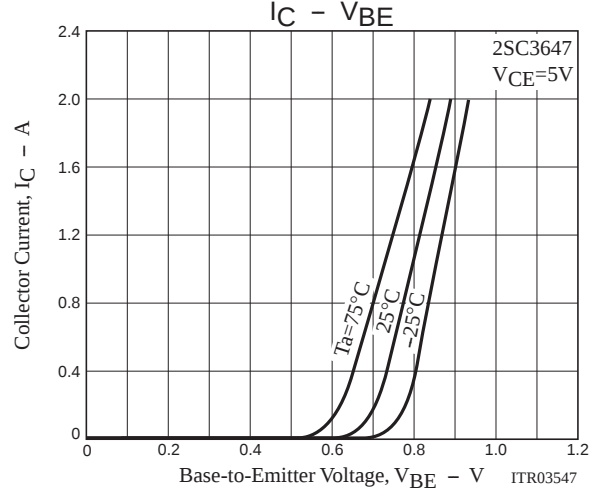
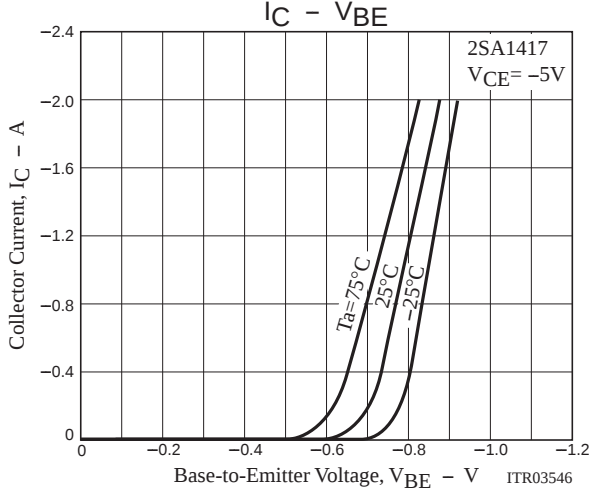
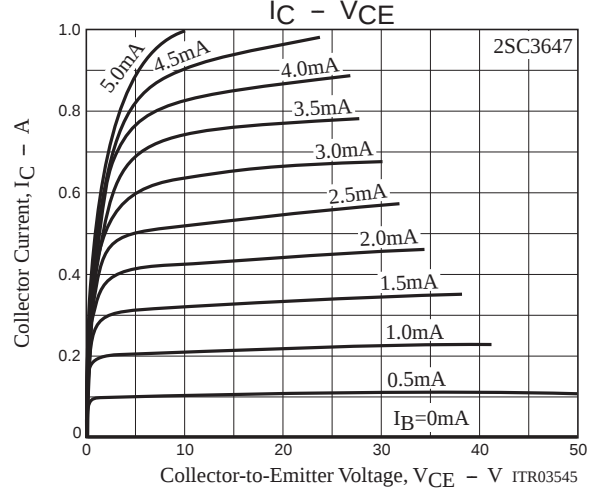
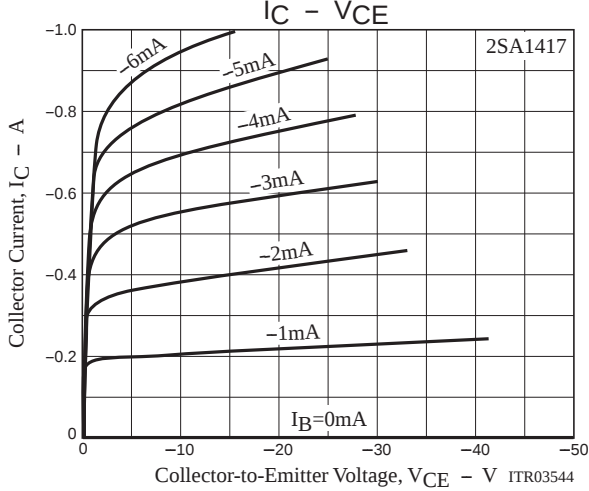
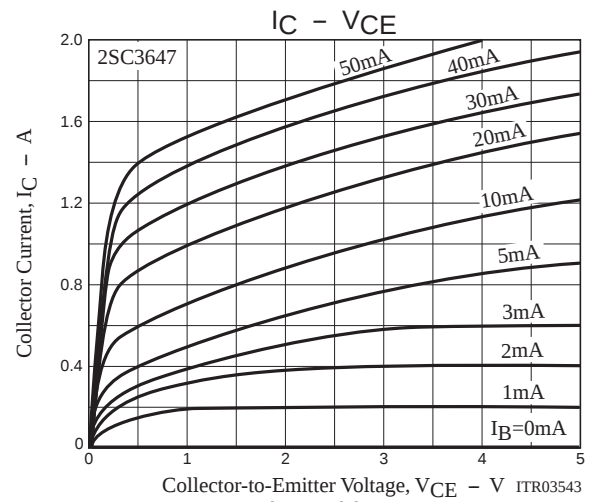
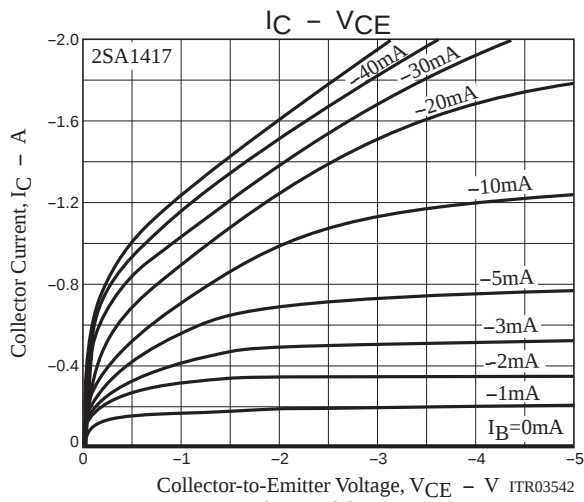
Rank	R	S	T
h _{FE}	100 to 200	140 to 280	200 to 400

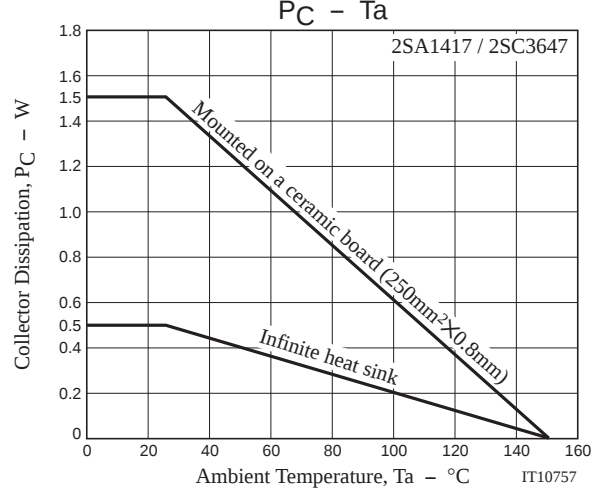
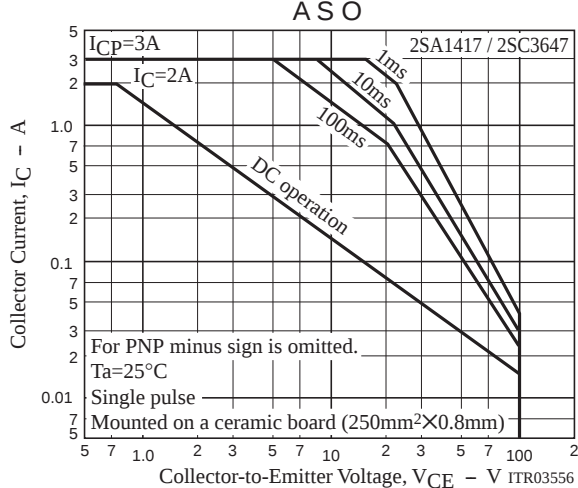
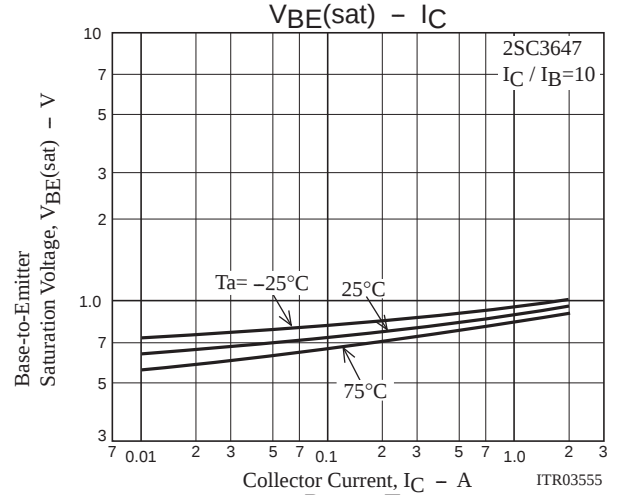
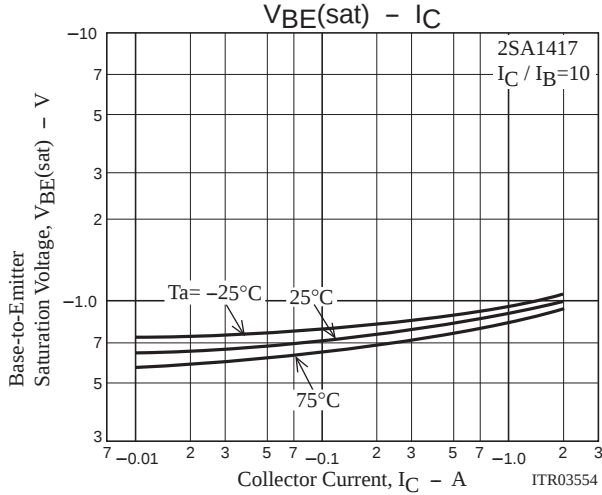
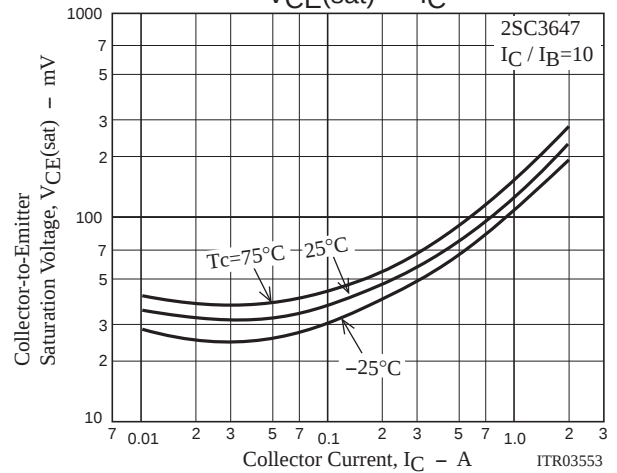
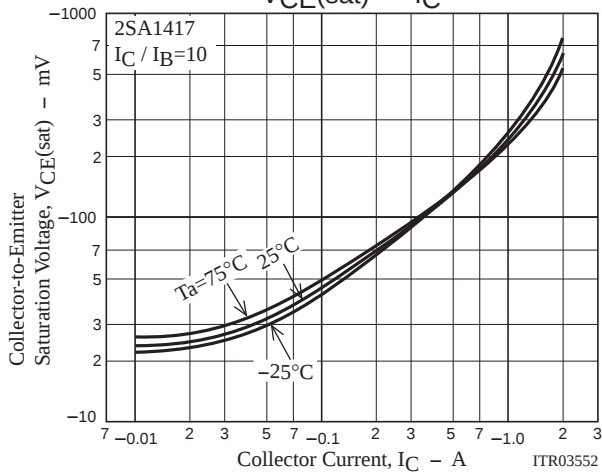
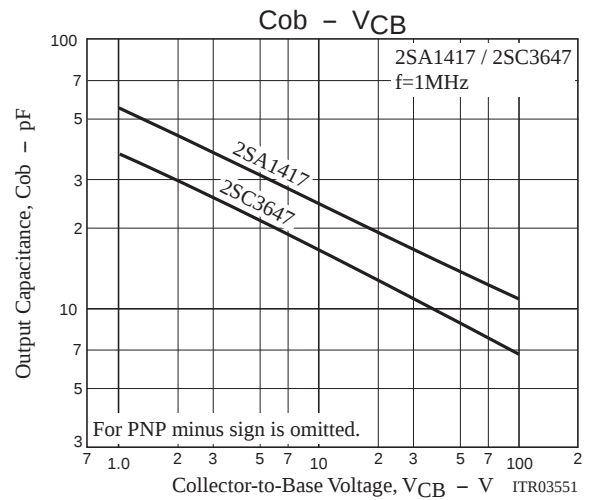
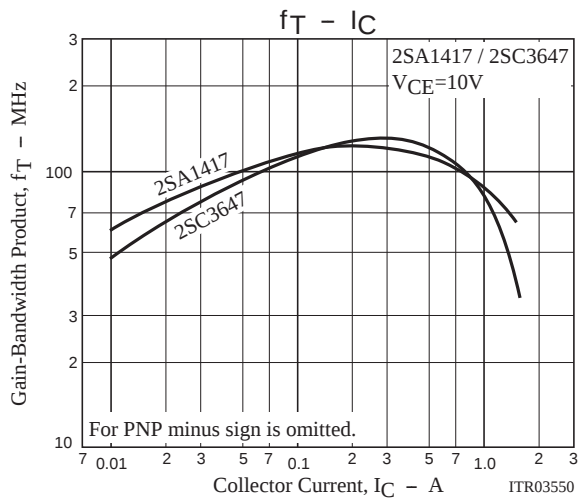
Switching Time Test Circuit



Ordering Information

Device	Package	Shipping	memo
2SA1417S-TD-E	PCP	1,000pcs./reel	Pb Free
2SA1417T-TD-E	PCP	1,000pcs./reel	
2SC3647S-TD-E	PCP	1,000pcs./reel	
2SC3647T-TD-E	PCP	1,000pcs./reel	



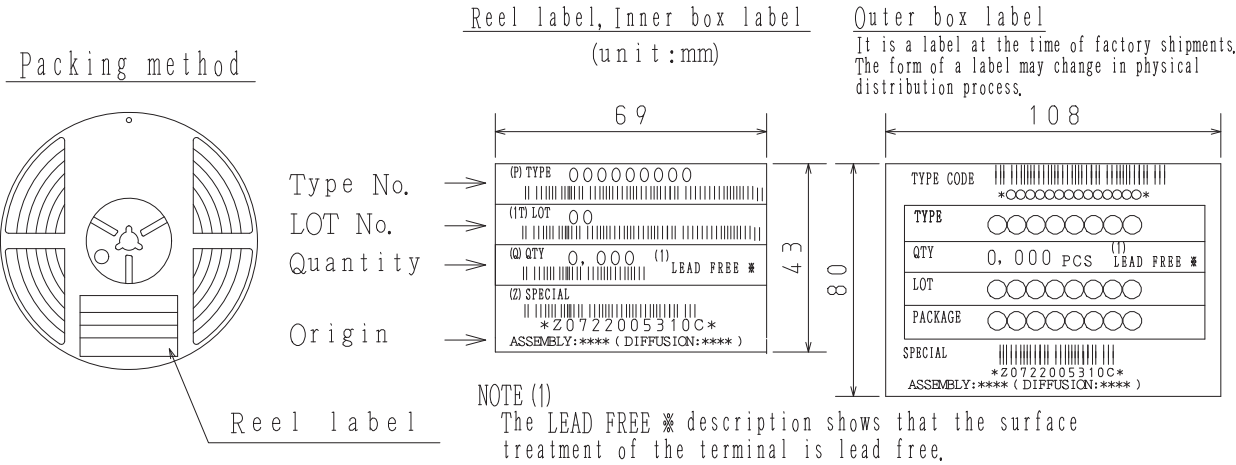


Embossed Taping Specification

2SA1417S-TD-E, 2SA1417T-TD-E, 2SC3647S-TD-E, 2SC3647T-TD-E

1. Packing Format

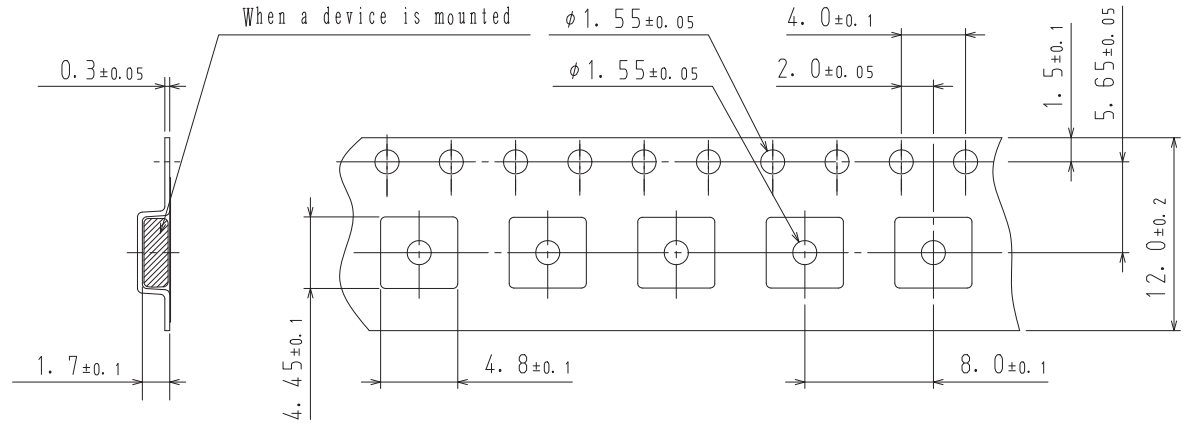
Package Name	Carrier Tape Type	Maximum Number of devices contained (pcs)			Packing format	
		Reel	Inner box	Outer box	Inner BOX (C-1)	Outer BOX (A-7)
PCP	PCP	1, 000	4, 000	24, 000	4 reels contained Dimensions:mm (external) 183×72×185	6 inner boxes contained Dimensions:mm (external) 440×195×210



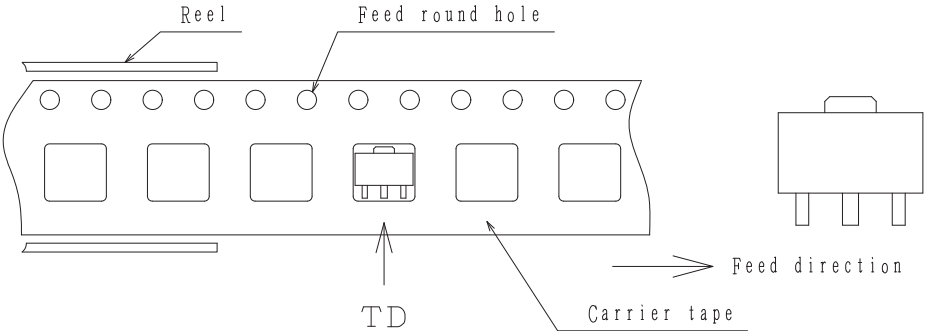
Label	JEITA Phase
LEAD FREE 3	JEITA Phase 3A
LEAD FREE 4	JEITA Phase 3

2. Taping configuration

2-1. Carrier tape size (unit:mm)



2-2. Device placement direction

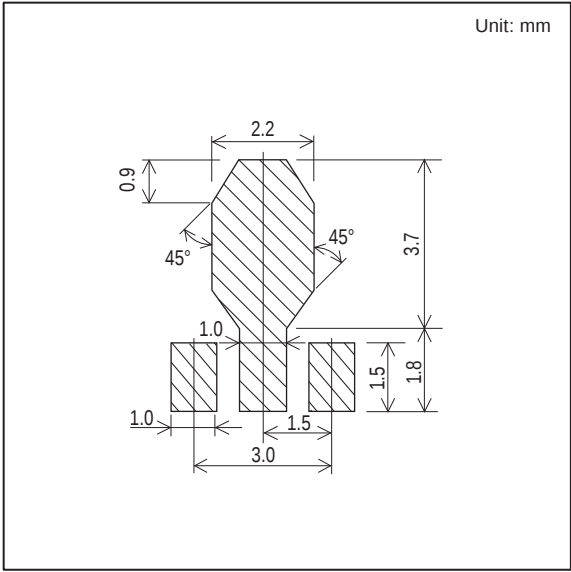
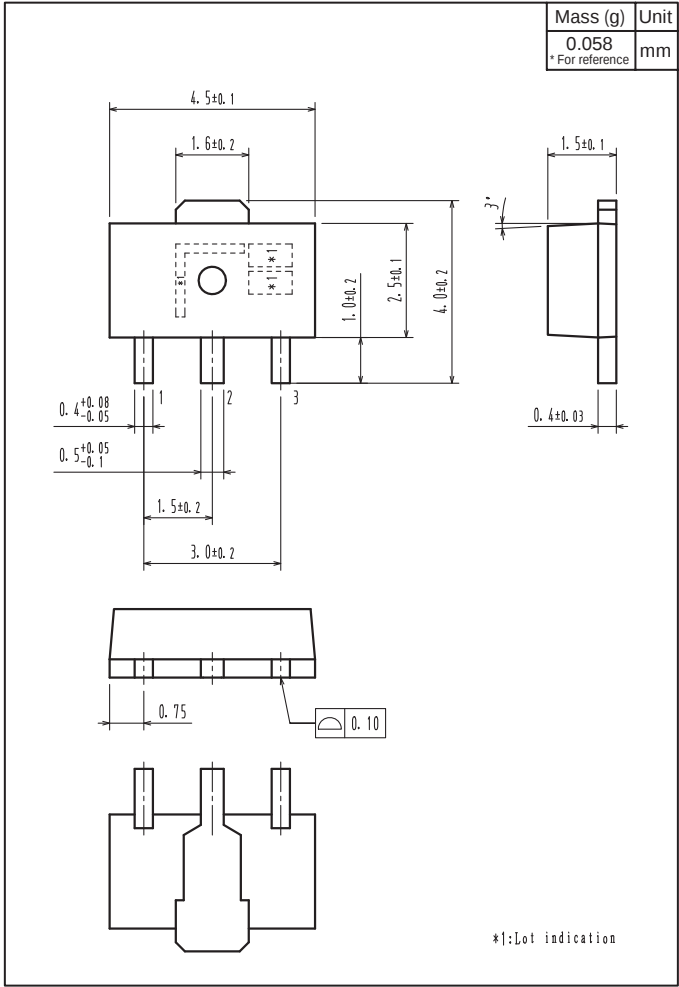


Those with pin 1 index on the feed hole side.....TD

Outline Drawing

2SA1417S-TD-E, 2SA1417T-TD-E, 2SC3647S-TD-E, 2SC3647T-TD-E

Land Pattern Example



ON Semiconductor and the ON logo are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of SCILLC's product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.