

Parameter	DTr1 and DTr2
V_{CEO}	50V
I_C	100mA
R_1	47k Ω

●Features

- 1) Two DTC144T chips in a EMT or SMT package.
- 2) Mounting possible with EMT3 or SMT3 automatic mounting machines.
- 3) Transistor elements are independent, eliminating interference.
- 4) Mounting cost and area can be cut in half.

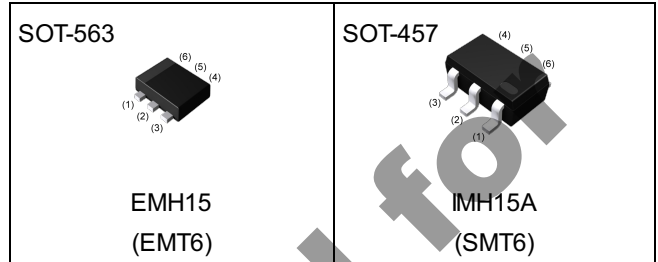
●Application

INVERTER, INTERFACE, DRIVER

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
EMH15	SOT-563 (EMT6)	1616	T2R	180	8	8000	H15
IMH15A	SOT-457 (SMT6)	2928	T110	180	8	3000	H15

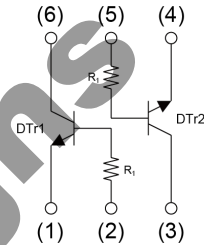
●Outline



●Inner circuit

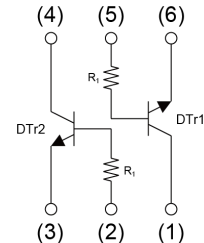
EMH15

- (1) DTr1 Emitter
- (2) DTr1 Base
- (3) DTr2 Collector
- (4) DTr2 Emitter
- (5) DTr2 Base
- (6) DTr1 Collector



IMH15A

- (1) DTr1 Collector
- (2) DTr2 Base
- (3) DTr2 Emitter
- (4) DTr2 Collector
- (5) DTr1 Base
- (6) DTr1 Emitter



● **Absolute maximum ratings** ($T_a = 25^\circ\text{C}$)

<For DTr1 and DTr2 in common>

Parameter		Symbol	Values	Unit
Collector-base voltage		V_{CBO}	50	V
Collector-emitter voltage		V_{CEO}	50	V
Emitter-base voltage		V_{EBO}	5	V
Collector current		I_{C}	100	mA
Power dissipation	EMH15	P_{D}^{*1*2}	150	mW/Total
	IMH15A	P_{D}^{*1*3}	300	
Junction temperature		T_{j}	150	$^\circ\text{C}$
Range of storage temperature		T_{stg}	-55 to +150	$^\circ\text{C}$

● **Electrical characteristics** ($T_a = 25^\circ\text{C}$)

<For DTr1 and DTr2 in common>

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector-base breakdown voltage	BV_{CBO}	$I_{\text{C}} = 50\mu\text{A}$	50	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	$I_{\text{C}} = 1\text{mA}$	50	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	$I_{\text{E}} = 50\mu\text{A}$	5	-	-	V
Collector cut-off current	I_{CBO}	$V_{\text{CB}} = 50\text{V}$	-	-	500	nA
Emitter cut-off current	I_{EBO}	$V_{\text{EB}} = 4\text{V}$	-	-	500	nA
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}} = 10\text{mA}, I_{\text{B}} = 1\text{mA}$	-	-	300	mV
DC current gain	h_{FE}	$V_{\text{CE}} = 5\text{V}, I_{\text{C}} = 1\text{mA}$	100	250	600	-
Input resistance	R_1	-	32.9	47	61.1	k Ω
Transition frequency	f_{T}^{*4}	$V_{\text{CE}} = 10\text{V}, I_{\text{E}} = -5\text{mA}, f = 100\text{MHz}$	-	250	-	MHz

*1 Each terminal mounted on a reference land.

*2 120mW per element must not be exceeded.

*3 200mW per element must not be exceeded.

*4 Characteristics of built-in transistor.

● **Electrical characteristic curves** ($T_a = 25^\circ\text{C}$)

<For DTr1 and DTr2 in common>

Fig.1 Grounded Emitter Propagation Characteristics

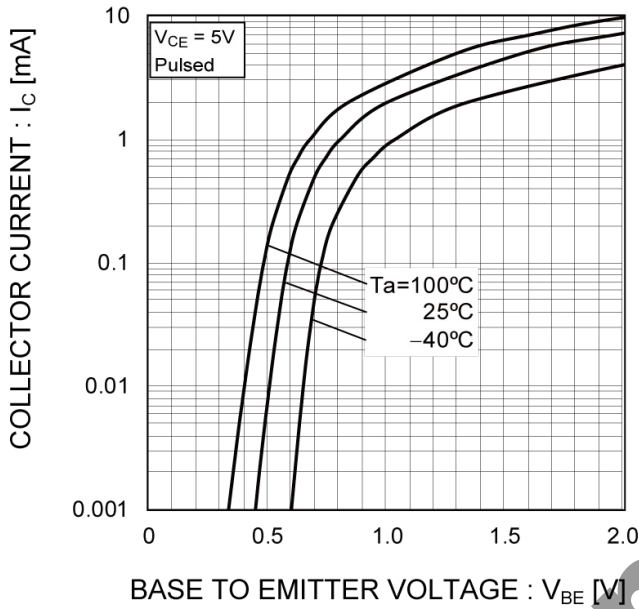


Fig.2 Grounded Emitter Output Characteristics

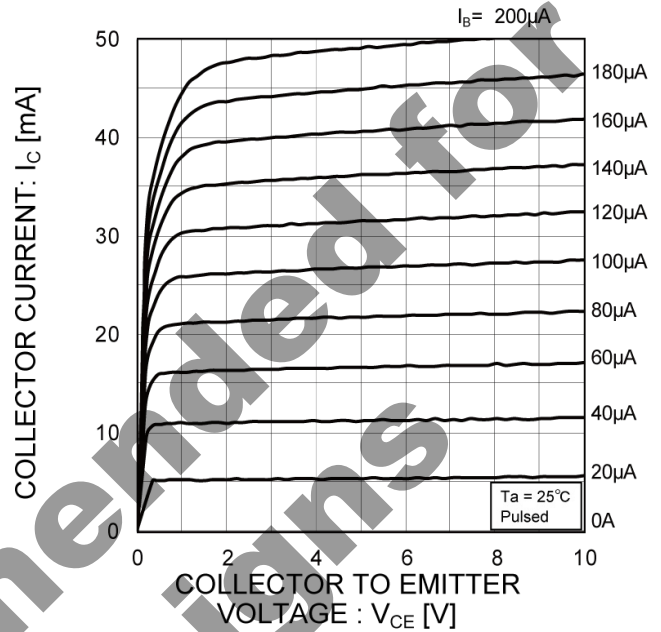


Fig.3 DC Current Gain vs. Collector Current

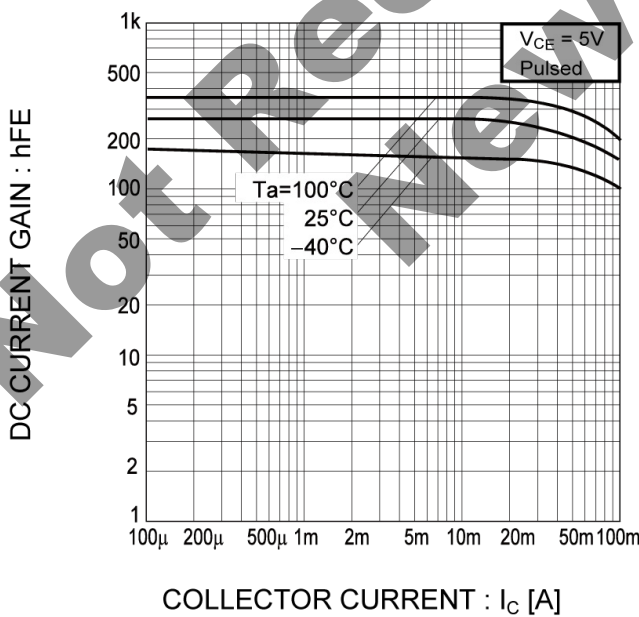
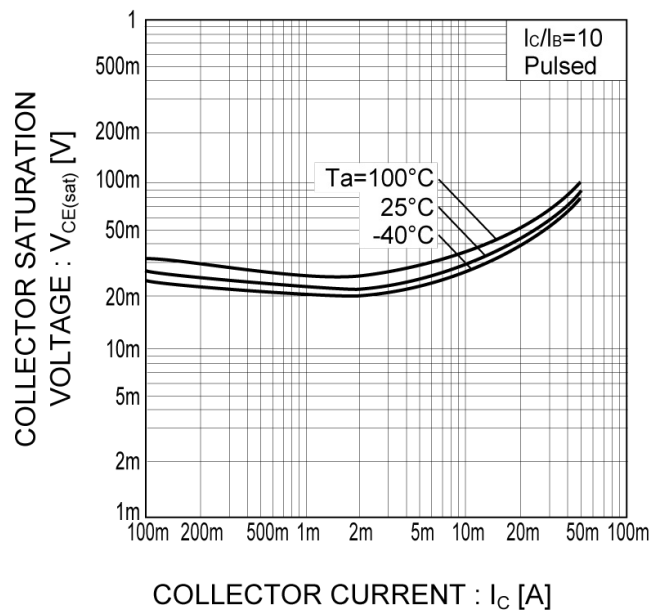
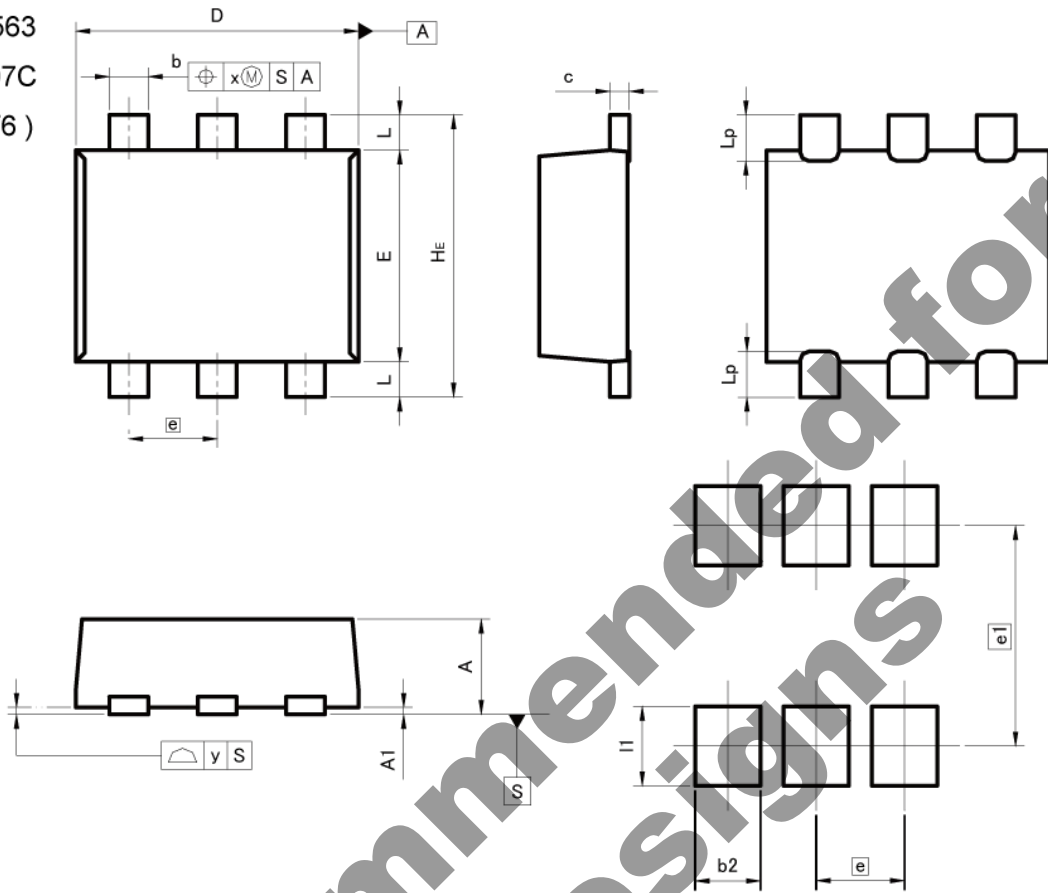


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current



●Dimensions

SOT-563
SC-107C
(EMT6)



Pattern of terminal position areas
[Not a pattern of soldering pads]

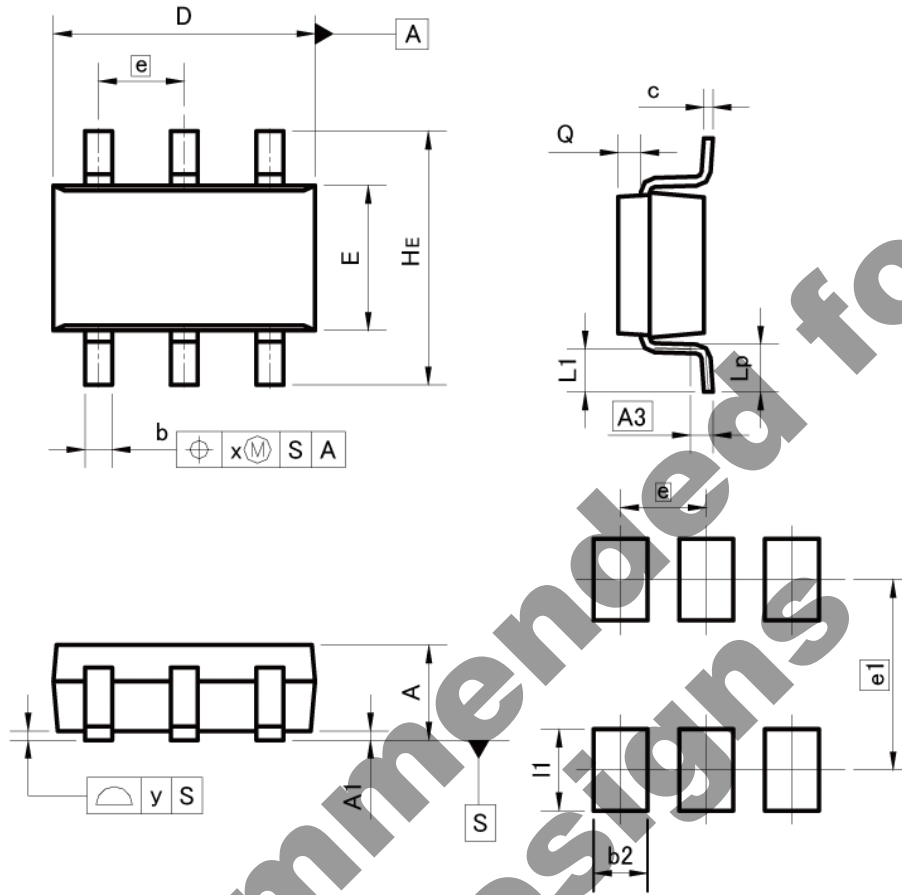
DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.45	0.55	0.018	0.022
A1	0.00	0.10	0.000	0.004
b	0.17	0.27	0.007	0.011
c	0.08	0.18	0.003	0.007
D	1.50	1.70	0.059	0.067
E	1.10	1.30	0.043	0.051
e	0.50		0.020	
HE	1.50	1.70	0.059	0.067
L	0.10	0.30	0.004	0.012
Lp	-	0.35	-	0.014
x	-	0.10	-	0.004
y	-	0.10	-	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	-	0.37	-	0.015
e1	1.25		0.049	
l1	-	0.45	-	0.018

Dimension in mm/inches

●Dimensions

SOT-457
 SC-74
 (SMT6)



Pattern of terminal position areas
 [Not a pattern of soldering pads]

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.00	1.30	0.039	0.051
A1	0.00	0.10	0.000	0.004
A3	0.25		0.010	
b	0.25	0.40	0.010	0.016
c	0.09	0.25	0.004	0.010
D	2.80	3.00	0.110	0.118
E	1.50	1.80	0.059	0.071
e	0.95		0.037	
HE	2.60	3.00	0.102	0.118
L1	0.30	0.60	0.012	0.024
Lp	0.40	0.70	0.016	0.028
Q	0.20	0.30	0.008	0.012
x	-	0.20	-	0.008
y	-	0.10	-	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	-	0.60	-	0.024
e1	2.10		0.083	
l1	-	0.90	-	0.035

Dimension in mm/inches

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