

Parameter	DTr1 and DTr2
$V_{CEO}$	50V
$I_C$	100mA
$R_1$	10k $\Omega$

## ●Features

- 1)Two DTC114T chips in a UMT or SMT package.
- 2)Mounting possible with UMT3 or SMT3 automatic mounting machines.
- 3)Transistor elements are independent, eliminating interference.
- 4)Mounting cost and area can be cut in half.

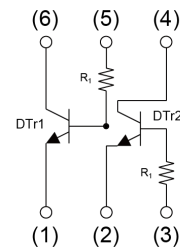
## ●Outline

<p>SOT-363</p> <p>UMH8N (UMT6)</p>	<p>SOT-457</p> <p>IMH8A (SMT6)</p>
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## ●Inner circuit

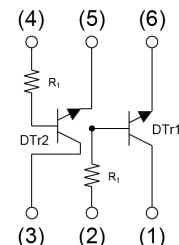
### UMH8N

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



### IMH8A

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



## ●Application

INVERTER, INTERFACE, DRIVER

## ●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
UMH8N	SOT-363 (UMT6)	2021	TR	180	8	3000	H8
IMH8A	SOT-457 (SMT6)	2928	T108	180	8	3000	H8

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

<For DTr1 and DTr2 in common>

Parameter		Symbol	Values	Unit
Collector-base voltage		$V_{\text{CBO}}$	50	V
Collector-emitter voltage		$V_{\text{CEO}}$	50	V
Emitter-base voltage		$V_{\text{EBO}}$	5	V
Collector current		$I_{\text{C}}$	100	mA
Power dissipation	UMH8N	$P_{\text{D}}^{*1*2}$	150	mW/Total
	IMH8A	$P_{\text{D}}^{*1*3}$	300	
Junction temperature		$T_{\text{j}}$	150	$^\circ\text{C}$
Range of storage temperature		$T_{\text{stg}}$	-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	$BV_{\text{CBO}}$	$I_{\text{C}} = 50\mu\text{A}$	50	-	-	V
Collector-emitter breakdown voltage	$BV_{\text{CEO}}$	$I_{\text{C}} = 1\text{mA}$	50	-	-	V
Emitter-base breakdown voltage	$BV_{\text{EBO}}$	$I_{\text{E}} = 50\mu\text{A}$	5	-	-	V
Collector cut-off current	$I_{\text{CBO}}$	$V_{\text{CB}} = 50\text{V}$	-	-	500	nA
Emitter cut-off current	$I_{\text{EBO}}$	$V_{\text{EB}} = 4\text{V}$	-	-	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	$h_{\text{FE}}$	$V_{\text{CE}} = 5\text{V}, I_{\text{C}} = 1\text{mA}$	100	250	600	-
Input resistance	$R_1$	-	7	10	13	k $\Omega$
Transition frequency	$f_{\text{T}}^{*4}$	$V_{\text{CE}} = 10\text{V}, I_{\text{E}} = -5\text{mA}, f = 100\text{MHz}$	-	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

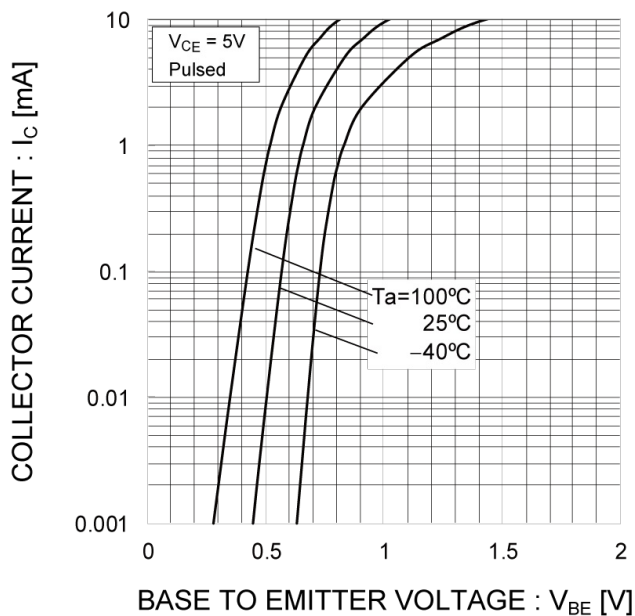


Fig.2 Grounded Emitter Output Characteristics

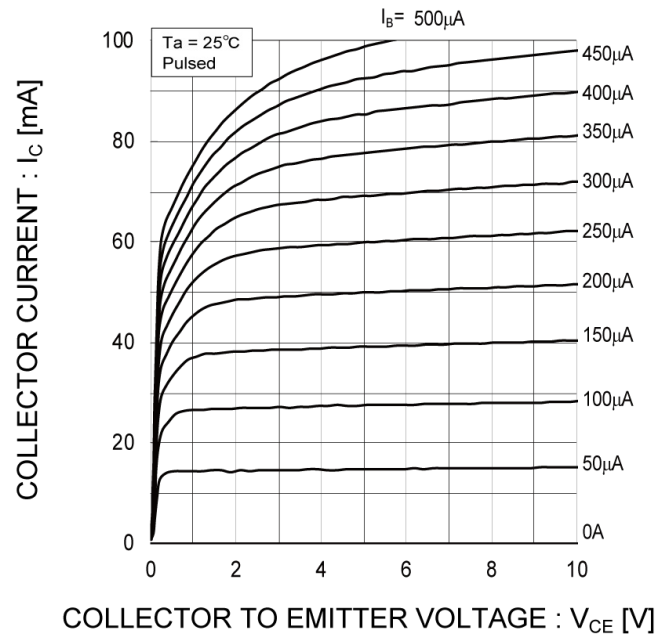


Fig.3 DC Current Gain vs. Collector Current

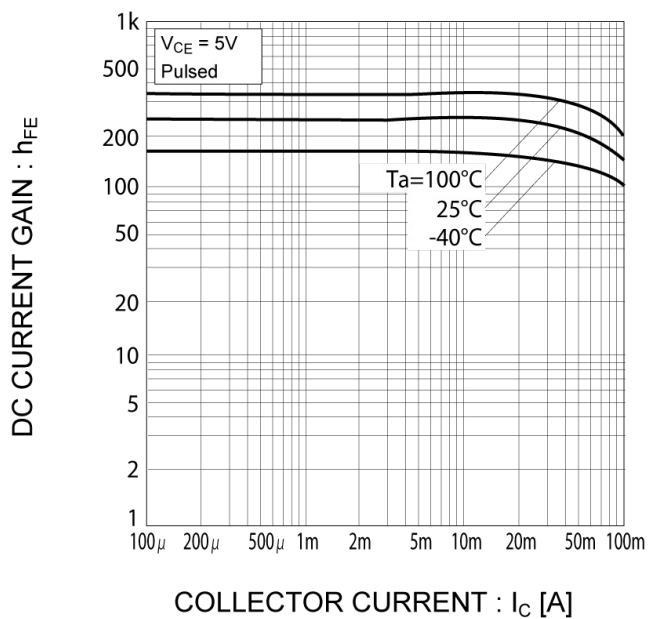
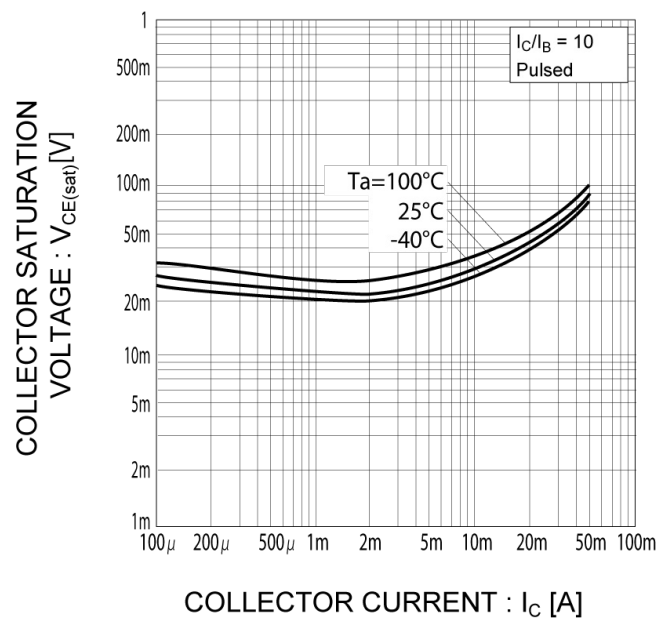
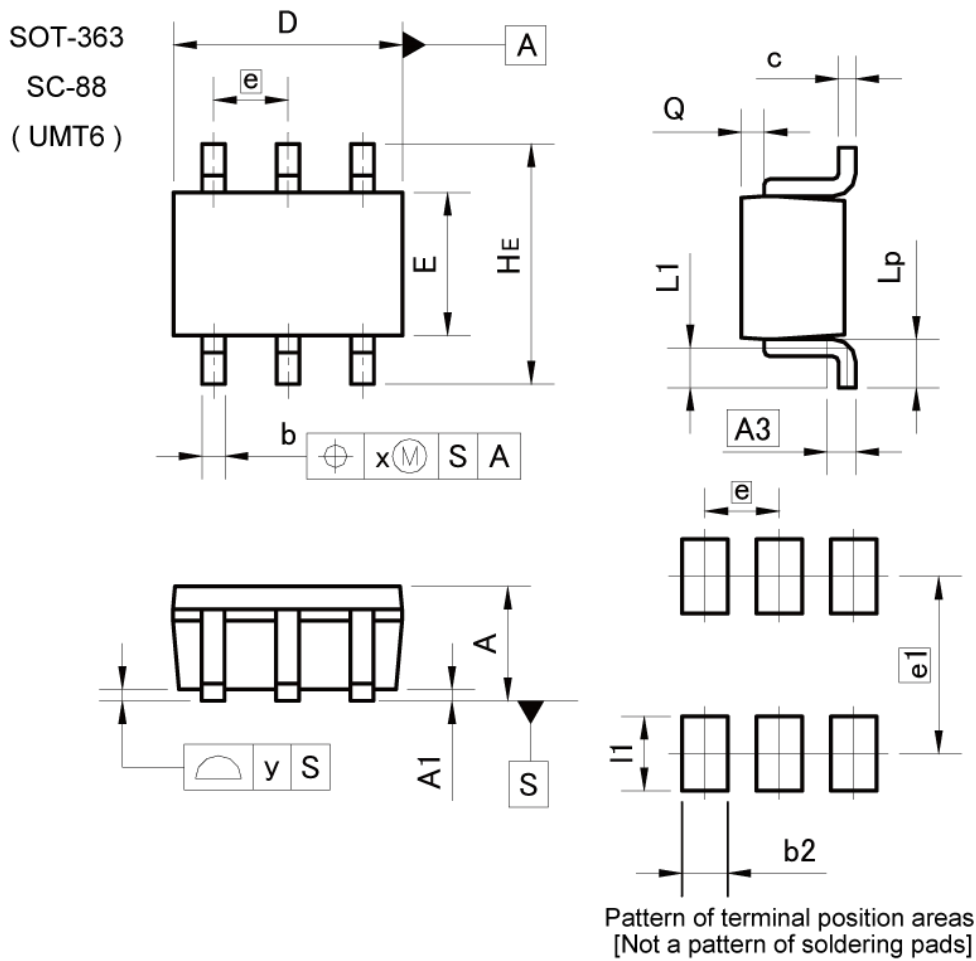


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current



## ●Dimensions



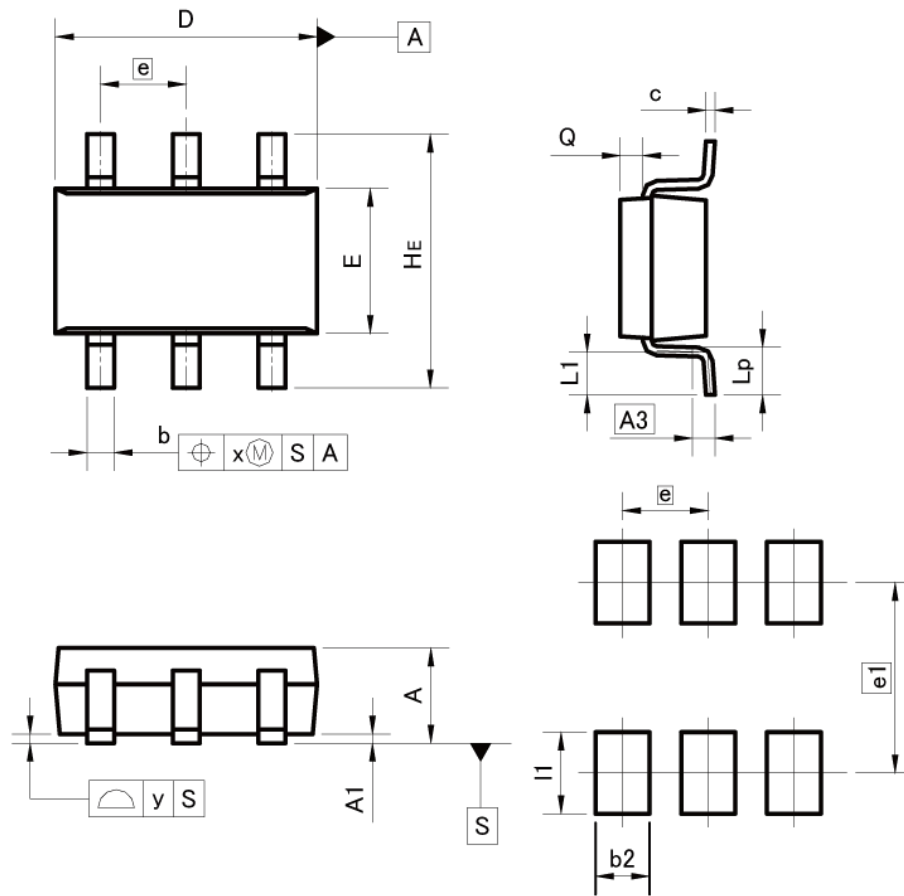
DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	1.00	0.031	0.039
A1	0.00	0.10	0.000	0.004
A3	0.25		0.010	
b	0.15	0.30	0.006	0.012
c	0.10	0.20	0.004	0.008
D	1.90	2.10	0.075	0.083
E	1.15	1.35	0.045	0.053
e	0.65		0.026	
HE	2.00	2.20	0.079	0.087
L1	0.20	0.50	0.008	0.020
Lp	0.25	0.55	0.010	0.022
Q	0.10	0.30	0.004	0.012
x	—	0.10	—	0.004
y	—	0.10	—	0.004

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	—	0.40	—	0.016
e1	1.55		0.061	
l1	—	0.65	—	0.026

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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