

Parameter	DTr1 and DTr2
V_{CC}	50V
$I_{C(MAX.)}$	100mA
R_1	22k Ω
R_2	22k Ω

●Features

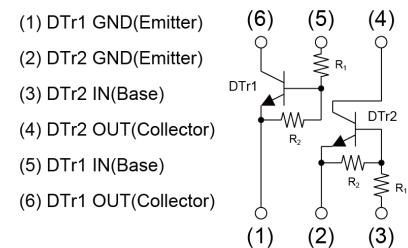
- 1)Two DTC124E chips in a UMT or SMT package.
- 2)Mounting possible with UMT3 or SMT3 automatic mounting machines.
- 3)Transistor elements are independent, eliminating interference.
- 4)Mounting cost and area can be cut in half.

●Outline

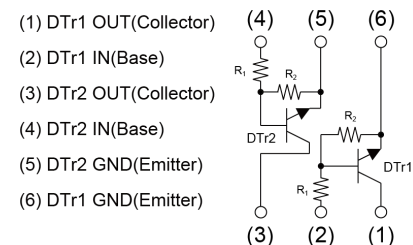
SOT-363 UMH5N (UMT6)	SOT-457 IMH5A (SMT6)
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●Inner circuit

UMH5N



IMH5A



●Application

INVERTER, INTERFACE, DRIVER

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
UMH5N	SOT-363 (UMT6)	2021	TR	180	8	3000	H5
IMH5A	SOT-457 (SMT6)	2928	T108	180	8	3000	H5

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

<For DTr1 and DTr2 in common>

Parameter		Symbol	Values	Unit
Supply voltage		V_{CC}	50	V
Input voltage		V_{IN}	-10 to 40	V
Output current		I_O	30	mA
Collector current		$I_{C(MAX)}^{*1}$	100	mA
Power dissipation	UMH5N	P_D^{*2*3}	150	mW/Total
	IMH5A	P_D^{*2*4}	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.	
Input voltage	$V_{I(off)}$	$V_{CC} = 5V, I_O = 100\mu A$	-	-	0.5	V
	$V_{I(on)}$	$V_O = 0.2V, I_O = 5mA$	3	-	-	
Output voltage	$V_{O(on)}$	$I_O = 10mA, I_I = 0.5mA$	-	100	300	mV
Input current	I_I	$V_I = 5V$	-	-	360	μA
Output current	$I_{O(off)}$	$V_{CC} = 50V, V_I = 0V$	-	-	500	nA
DC current gain	G_I	$V_O = 5V, I_O = 5mA$	56	-	-	-
Input resistance	R_1	-	28.6	22	15.4	k Ω
Resistance ratio	R_2/R_1	-	0.8	1.0	1.2	-
Transition frequency	f_T^{*1}	$V_{CE} = 10V, I_E = -5mA,$ $f = 100MHz$	-	250	-	MHz

*1 Characteristics of built-in transistor.

*2 Each terminal mounted on a reference land.

*3 120mW per element must not be exceeded.

*4 200mW per element must not be exceeded.

● **Electrical characteristic curves** ($T_a = 25^\circ\text{C}$)
 <For DTr1 and DTr2 in common>

Fig.1 Input Voltage vs. Output Current
 (ON Characteristics)

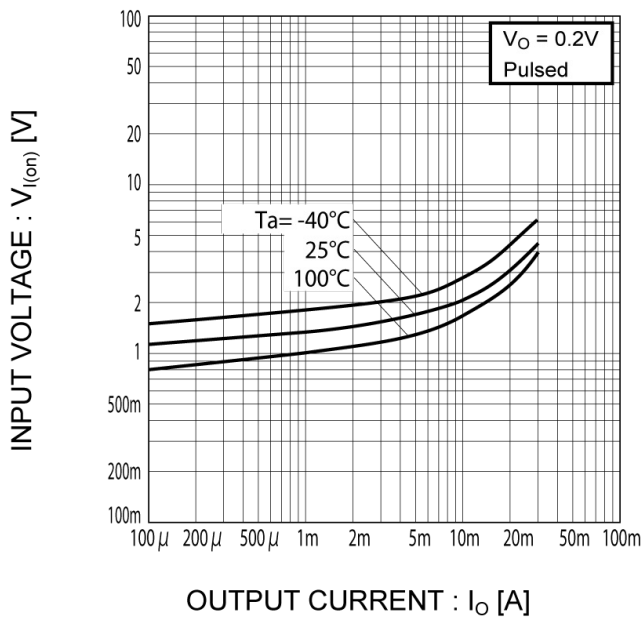


Fig.2 Output Current vs. Input Voltage
 (OFF Characteristics)

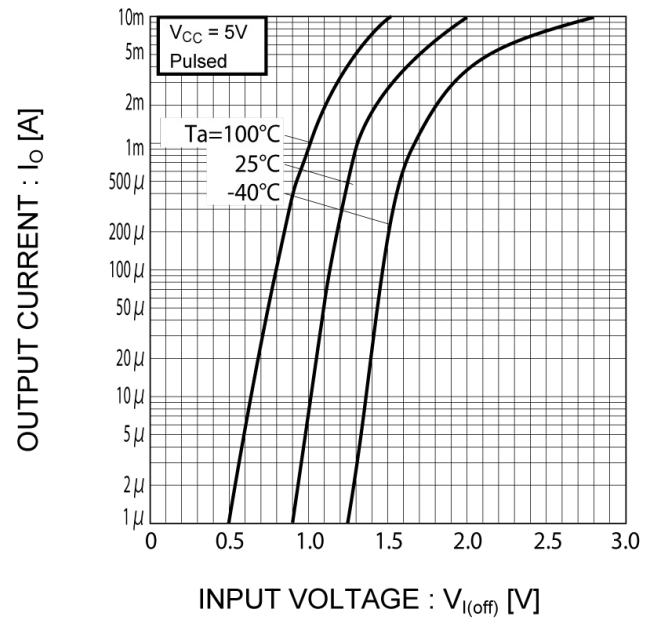


Fig.3 Output Current vs. Output Voltage

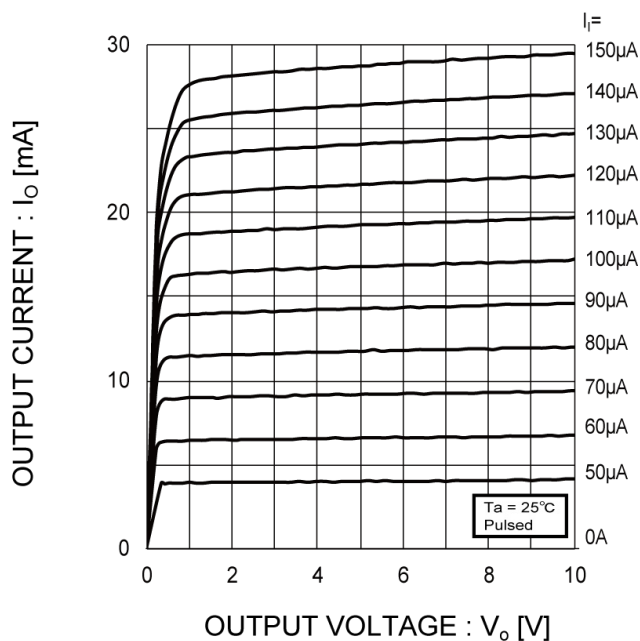
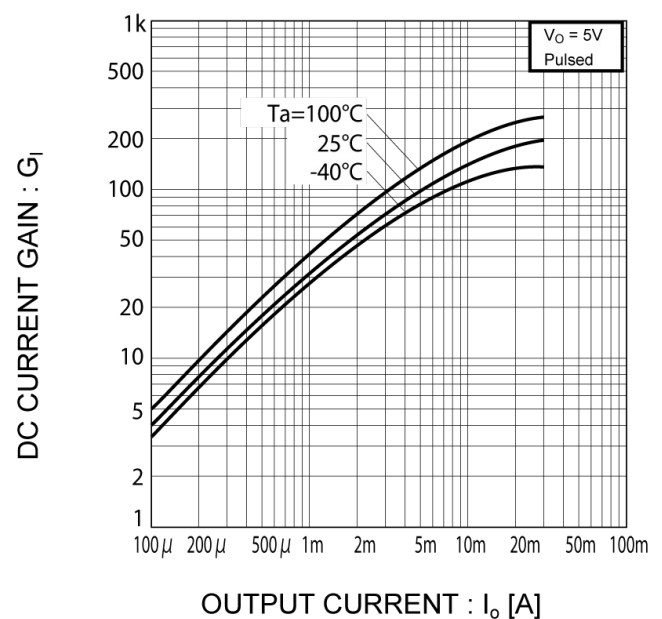


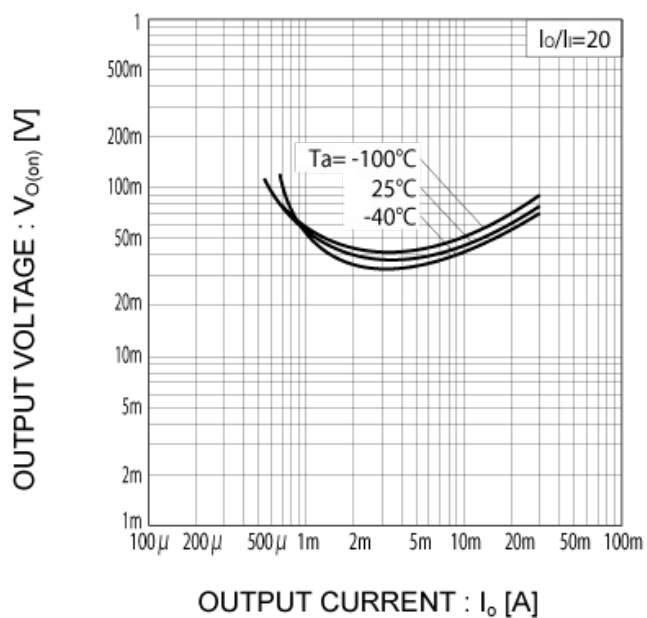
Fig.4 DC Current Gain vs. Output Current



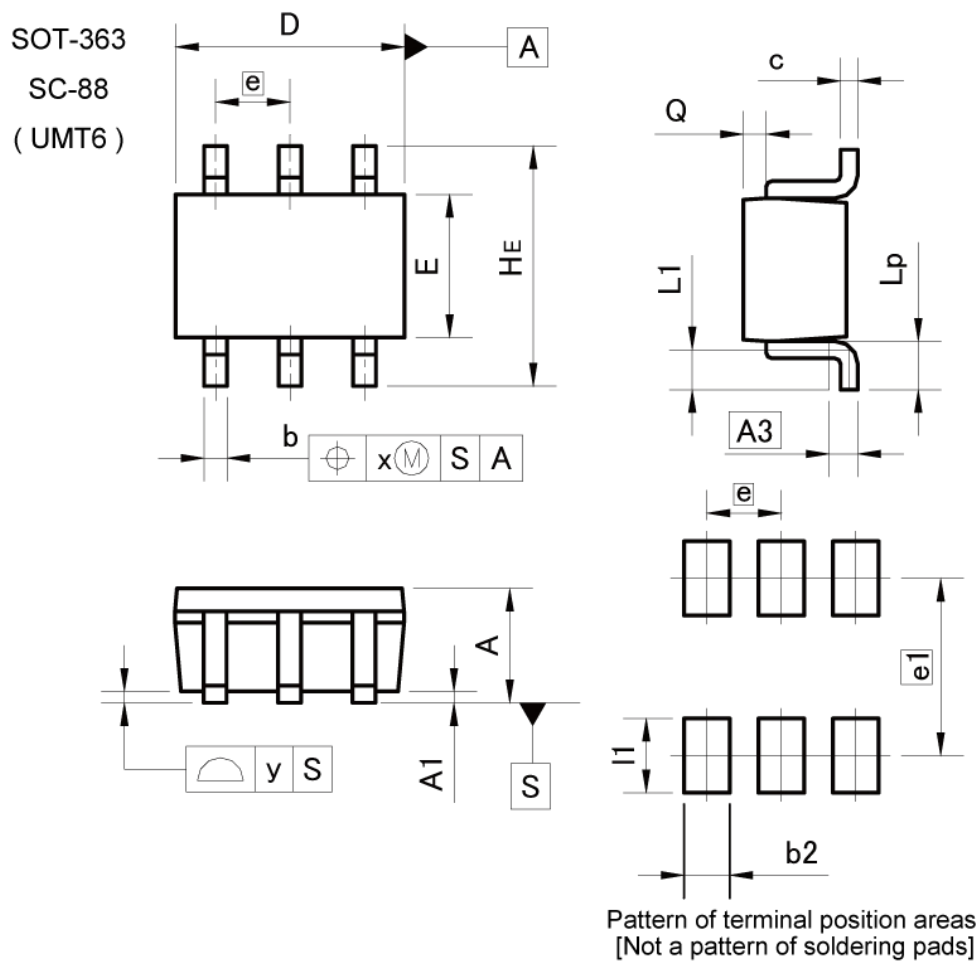
●Electrical characteristic curves ($T_a = 25^\circ\text{C}$)

<For DTr1 and DTr2 in common>

Fig.5 Output Voltage vs. Output Current



● Dimensions



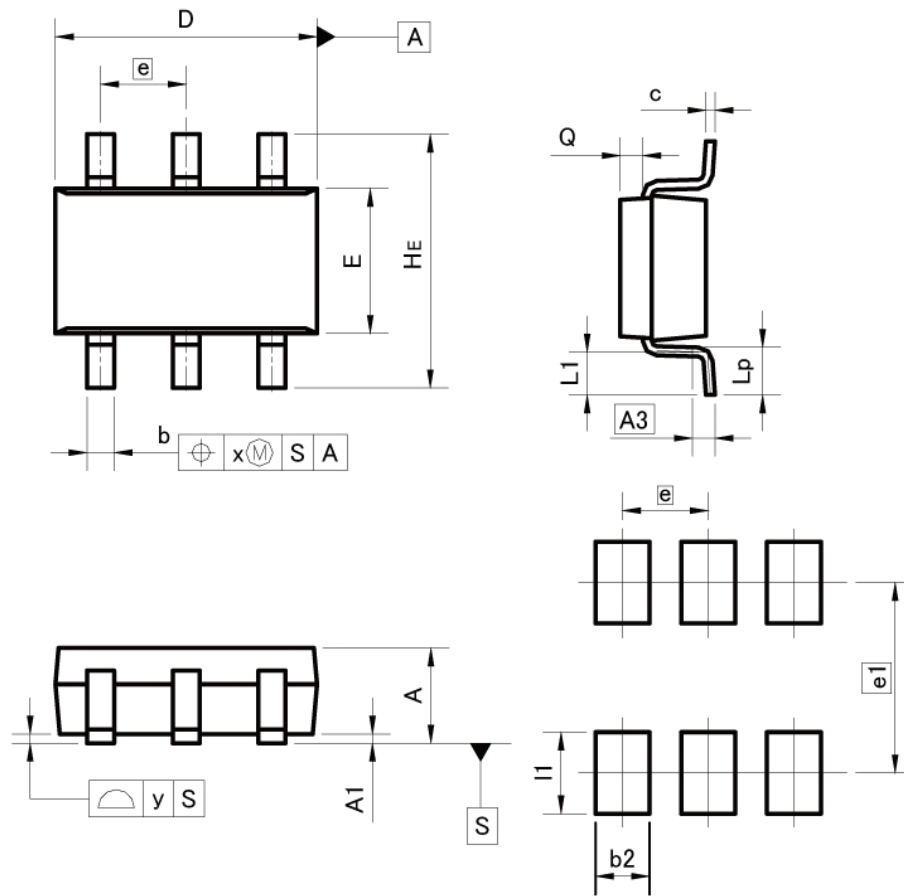
DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	1.00	0.031	0.039
A1	0.00	0.10	0.000	0.004
A3	0.25		0.010	
b	0.15	0.30	0.006	0.012
c	0.10	0.20	0.004	0.008
D	1.90	2.10	0.075	0.083
E	1.15	1.35	0.045	0.053
e	0.65		0.026	
HE	2.00	2.20	0.079	0.087
L1	0.20	0.50	0.008	0.020
Lp	0.25	0.55	0.010	0.022
Q	0.10	0.30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