

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

●Features

- 1)Two DTA124E chips in UMT or SMT package.
- 2)Mounting cost and area can be cut in half.

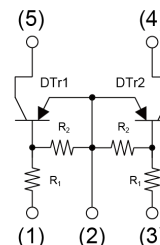
●Outline

SOT-353 UMA1N (UMT5)	SOT-25 FMA1A (SMT5)
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●Inner circuit

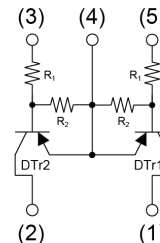
UMA1N

- (1) DTr1 IN(Base)
- (2) DTr1 / DTr2 GND(Emitter)
- (3) DTr2 IN(Base)
- (4) DTr2 OUT(Collector)
- (5) DTr1 OUT(Collector)



FMA1A

- (1) DTr1 OUT(Collector)
- (2) DTr2 OUT(Collector)
- (3) DTr2 IN(Base)
- (4) DTr1 / DTr2 GND(Emitter)
- (5) DTr1 IN(Base)



●Application

INVERTER, INTERFACE, DRIVER

●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
UMA1N	SOT-353 (UMT5)	2021	TR	180	8	3000	A1
FMA1A	SOT-25 (SMT5)	2928	T148	180	8	3000	A1

● **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}	-40 to 10	V
Output current		I_O	-30	mA
Collector current		$I_{C(MAX)}^{*1}$	-100	mA
Power dissipation	UMA1N	P_D^{*2*3}	150	mW/Total
	FMA1A	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	-	15.4	22	28.6	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)

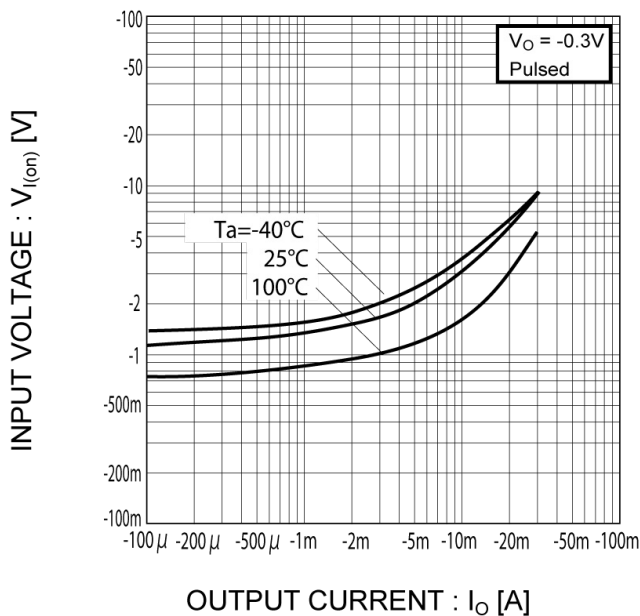


Fig.2 Output Current vs. Input Voltage
 (OFF Characteristics)

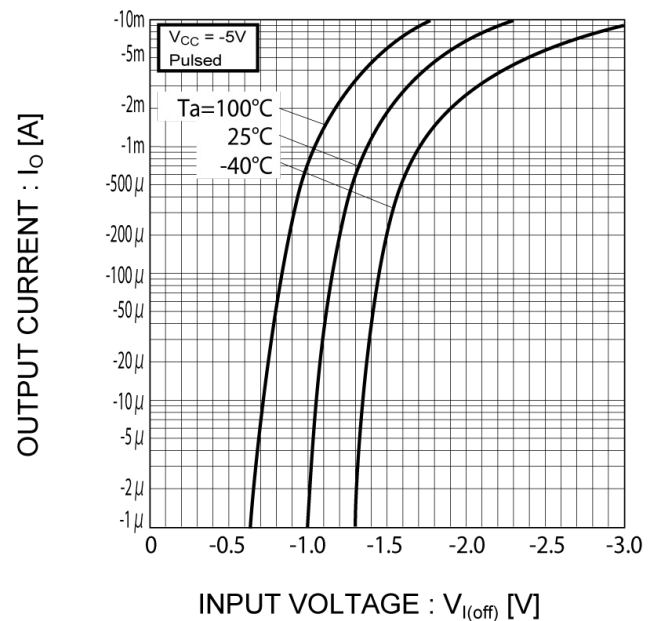


Fig.3 Output Current vs. Output Voltage

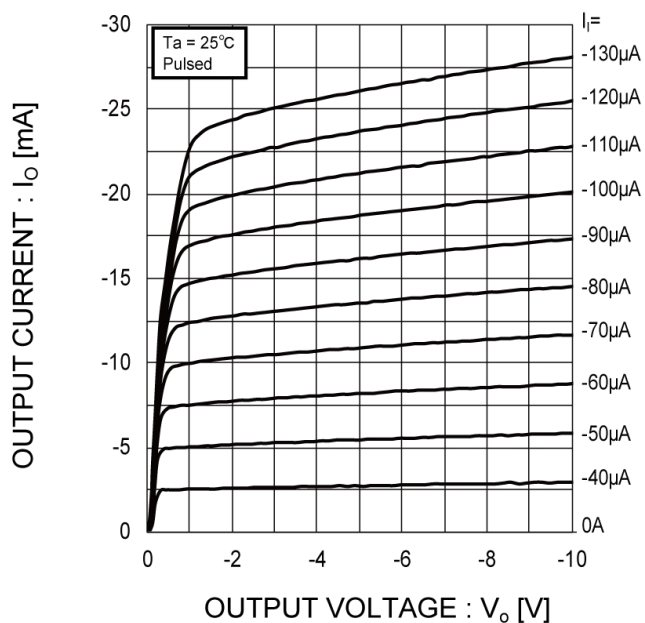
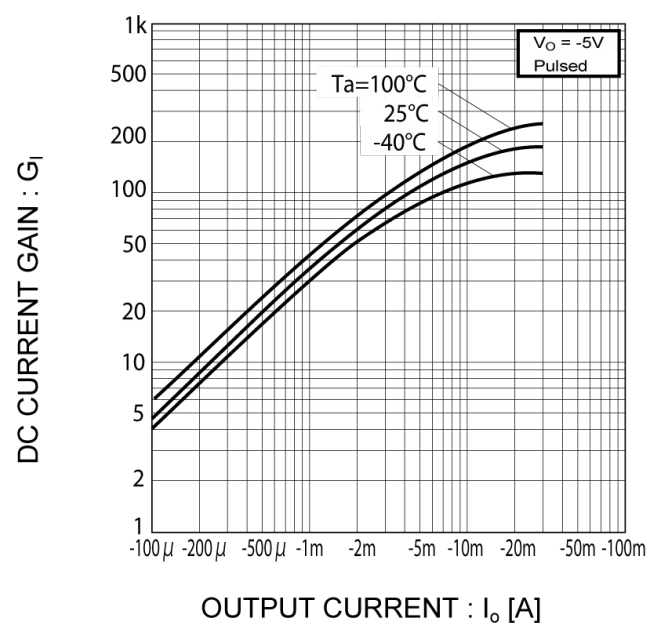


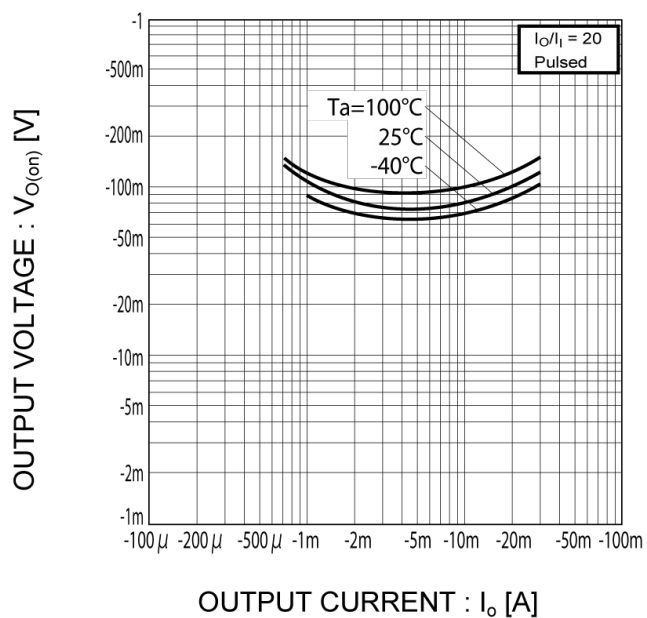
Fig.4 DC Current Gain vs. Output Current



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

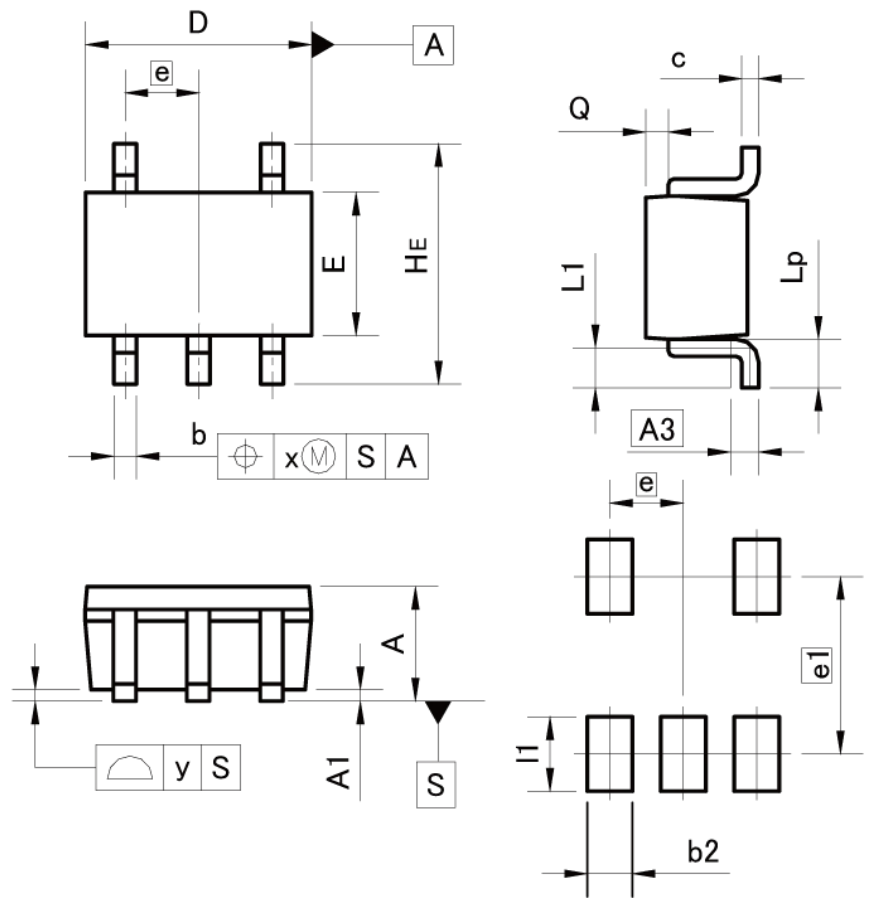
<For DTr1 and DTr2 in common>

Fig.5 Output Voltage vs. Output Current



●Dimensions

SOT-353
SC-88A
(UMT5)



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

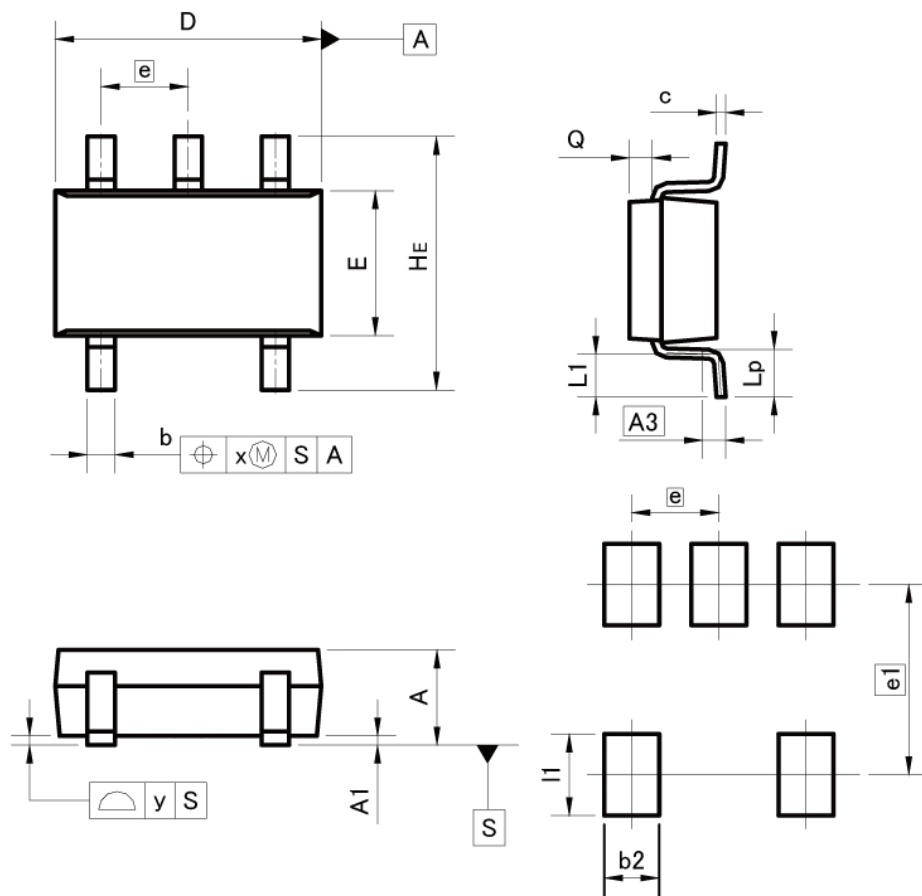
DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.80	1.00	0.031	0.039
A1	0.00	0.10	0.000	0.004
A3	0.25		0.010	
b	0.15	0.30	0.006	0.012
c	0.10	0.20	0.004	0.008
D	1.90	2.10	0.075	0.083
E	1.15	1.35	0.045	0.053
e	0.65		0.026	
HE	2.00	2.20	0.079	0.087
L1	0.20	0.50	0.008	0.020
Lp	0.25	0.55	0.010	0.022
Q	0.10	0.30	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-25
SC-74A
(SMT5)



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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