

Emitter common(dual digital transistors)

Parameter	DTr1 and DTr2	
V _{CC}	-50V	
I _{C(MAX.)}	-100mA	
R ₁	22kΩ	
R_2	22kΩ	

Features

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

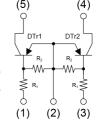
Outline



•Inner circuit

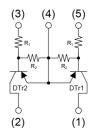
UMA1N

- (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°C)

<For DTr1 and DTr2 in common>

Parameter			Values	Unit
Supply voltage			-50	V
Input voltage			-40 to 10	V
Output current			-30	mA
Collector current	I _{C(MAX)} *1	-100	mA	
Davis a dia sin atia a	UMA1N	P _D *2*3	150	::::\\//T- t-
Power dissipation	FMA1A	P _D *2*4	300	mW/Total
Junction temperature		T _j	150	°C
Range of storage temperature		T _{stg}	-55 to +150	°C

● Electrical characteristics (T_a = 25°C)

<For DTr1 and DTr2 in common>

Darameter	Cumbal	Conditions	Values			Unit	
Parameter	Symbol Conditions —		Min.	Тур.	Max.	Offic	
Input voltage	$V_{l(off)}$	$V_{CC} = -5V, I_{O} = -100\mu A$	-	-	-0.5	V	
Input voltage	V _{I(on)}	$V_{O} = -0.2V, I_{O} = -5mA$	-3	-	-		
Output voltage	V _{O(on)}	$I_O = -10$ mA, $I_I = -0.5$ mA	-	-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	kΩ	
Resistance ratio	R ₂ /R ₁	-	8.0	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.

^{*3 120}mW per element must not be exceeded.

^{*4 200}mW per element must not be exceeded.

● Electrical characteristic curves (T_a = 25°C)

<For DTr1 and DTr2 in common>

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

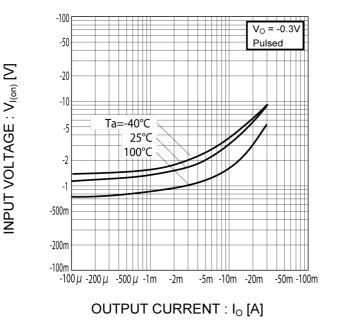
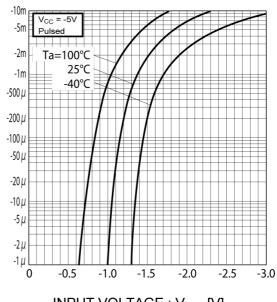


Fig.2 Output Current vs. Input Voltage (OFF Characteristics)



OUTPUT CURRENT : I_o [A]

INPUT VOLTAGE : $V_{I(off)}$ [V]

Fig.3 Output Current vs. Output Voltage

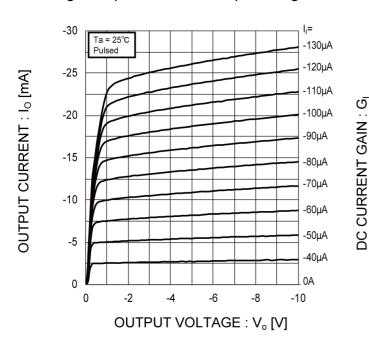
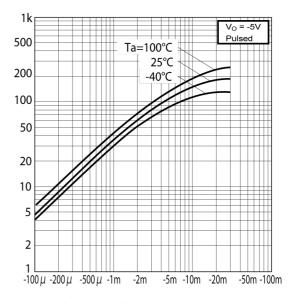


Fig.4 DC Current Gain vs. Output Current

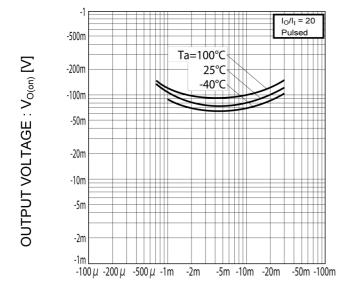


OUTPUT CURRENT: Io [A]

● Electrical characteristic curves (T_a = 25°C)

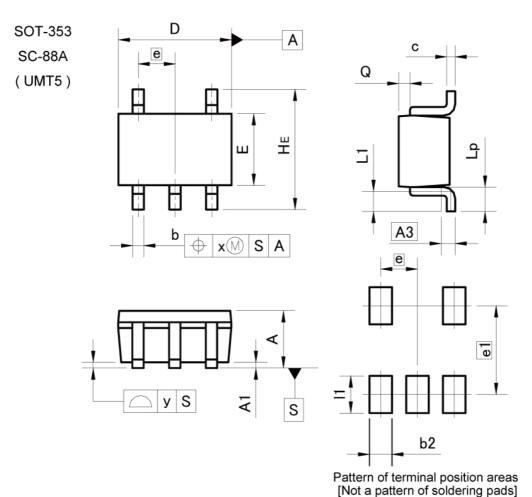
<For DTr1 and DTr2 in common>

Fig.5 Output Voltage vs. Output Current



OUTPUT CURRENT : Io [A]

Dimensions



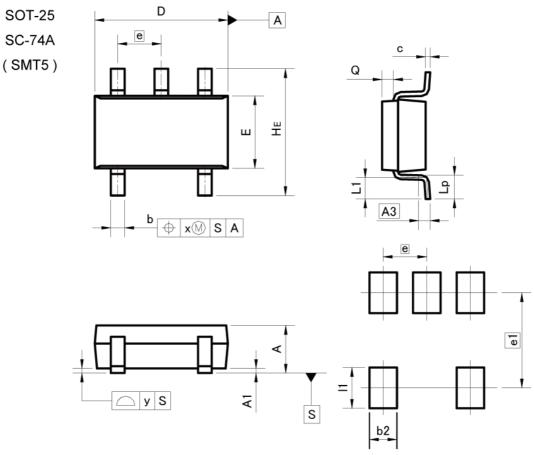
MILIMETERS INCHES DIM MIN MIN MAX 0.039 0.80 1.00 0.031 Α1 0.00 0.10 0.000 0.004 0.25 0.010 A3 0.15 0.30 0.006 0.012 b С 0.10 0.20 0.004 0.008 D 1.90 2.10 0.075 0.083 Ε 1.15 1.35 0.045 0.053 е 0.65 0.026 HΕ 2.00 2.20 0.079 0.087 L1 0.20 0.50 0.008 0.020 0.010 0.022 Lp 0.25 0.55 Q 0.004 0.012 0.10 0.30 0.004 0.10 Х 0.10 0.004

DIM b2	MILIMETERS		INCHES		
	MIN	MAX	MIN	MAX	
	- 7	0.40	-	0.016	
e1	1.55		0.0	61	
11		0.65	-	0.026	

Dimension in mm/inches



Dimensions



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

DIM	MILIM	ETERS	INC	HES
DIM	MIN	MAX	MIN	MAX
Α	1.00	1.30	0.039	0.051
A1	0.00	0.10	0.000	0.004
A3	0.	25	0.0	10
b	0.25	0.40	0.010	0.016
С	0.09	0.25	0.004	0.010
D	2.80	3.00	0.110	0.118
Е	1.50	1.80	0.059	0.071
е	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
х	-	0.20	-	0.008
У	-	0.10	-	0.004

	DIM	MILIM	ETERS	INC	HES	
	DIM	MIN	MAX	MIN MAX	MAX	
	b2	- 1	0.60	- 0	0.024	
	e1	2.	10	0.0	83	
	11	-	0.90	-	0.035	

Dimension in mm/inches



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