Emitter common(dual digital transistor)

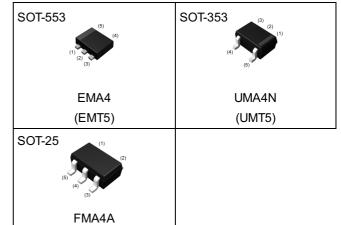
Datasheet

Parameter	DTr1 and DTr2
$V_{\sf CEO}$	-50V
I _C	-100mA
R ₁	10kΩ

Features

- 1)Two DTA114T chips in a EMT or UMT or SMT package.
- 2) Mounting cost and area can be cut in half.

Outline

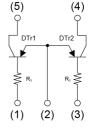


•Inner circuit

EMA4 / UMA4N

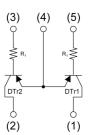
(SMT5)

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



FMA4A

- (1) DTr1 Collector
- (2) DTr2 Collector
- (3) DTr2 Base
- (4) DTr1 / DTr2 Emitter
- (5) DTr1 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
EMA4	SOT-553 (EMT5)	1616	T2R	180	8	8000	A4
UMA4N	SOT-353 (UMT5)	2021	TR	180	8	3000	A4
FMA4A	SOT-25 (SMT5)	2928	T148	180	8	3000	A4

● Absolute maximum ratings (T_a = 25°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		
	EMA4		P _D *1*2	150		
Power dissipation	UMA4N		P _D *1*2	150	mW/Total	
	FMA4A		P _D *1*3	300		
Junction temperature		Tj	150	°C		
Range of storage temperature		T _{stg}	-55 to +150	°C		

● Electrical characteristics (T_a = 25°C)

<For DTr1 and DTr2 in common>

Parameter	Cumbal	Conditions	Values			Unit	
Parameter	Symbol Conditions		Min.	Тур.	Max.	Offic	
Collector-base breakdown voltage	BV _{CBO}	I _C = -50μA	-50	-	-	V	
Collector-emitter breakdown voltage	BV _{CEO}	I _C = -1mA	-50	-	-	V	
Emitter-base breakdown voltage	BV _{EBO}	I _E = -50μA	-5	1	-	V	
		V _{CB} = -50V	-	-	-500	nA	
		V _{EB} = -4V	1	1	-500	nA	
		I _C = -10mA, I _B = -1mA	-	1	-300	mV	
DC current gain	h _{FE}	$V_{CE} = -5V, I_{C} = -1mA$	100	250	600	-	
Input resistance	R ₁	-	7	10	13	kΩ	
Transition frequency	f _T *4	V _{CE} = -10V, I _E = 5mA, f = 100MHz	-	250	-	MHz	

^{*1} Each terminal mounted on a reference land.



^{*2 120}mW per element must not be exceeded.

^{*3 200}mW per element must not be exceeded.

^{*4} Characteristics of built-in transistor.

● Electrical characteristic curves (T_a = 25°C)

<For DTr1 and DTr2 in common>

Fig.1 Grounded Emitter Propagation Characteristics

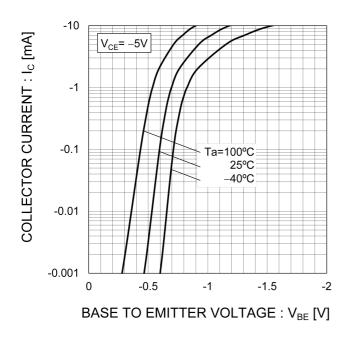


Fig.2 Grounded Emitter Output Characteristics

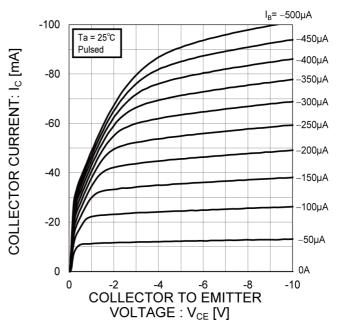


Fig.3 DC Current Gain vs. Collector Current

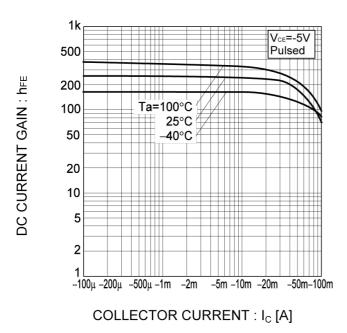
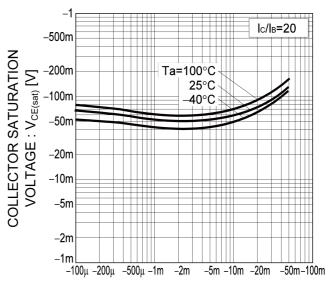
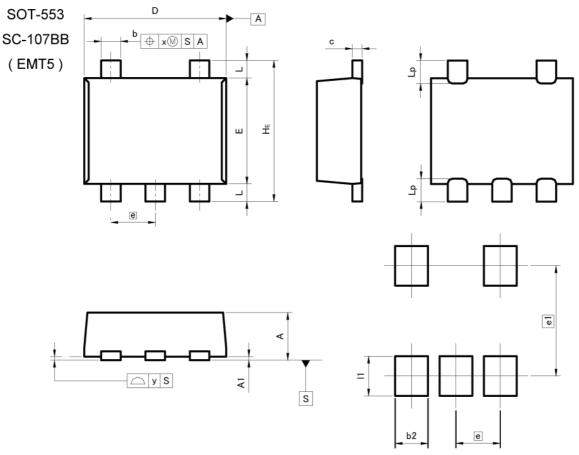


Fig.4 Collector-Emitter Saturation Voltage vs. Collector Current



Dimensions



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

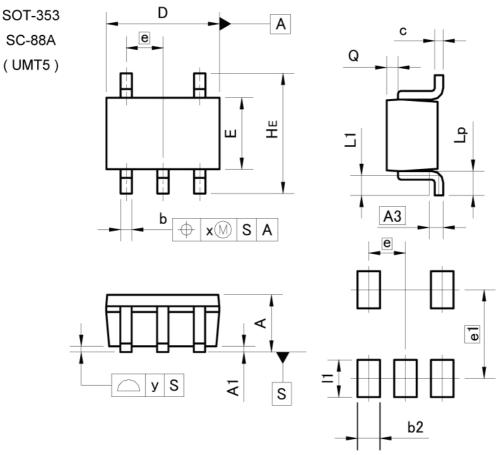
DIM	MILIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
Α	0.45	0.55	0.018	0.022
A1	0.00	0.10	0.000	0.004
b	0.17	0.27	0.007	0.011
С	0.08	0.18	0.003	0.007
D	1.50	1.70	0.059	0.067
E	1.10	1.30	0.043	0.051
е	0.	50	0.020	
HE	1.50	1.70	0.059	0.067
L	0.10	0.30	0.004	0.012
Lp	_	0.35	-	0.014
х	_	0.10	_	0.004
У	_	0.10	_	0.004

DIM	MILIMETERS		INC	HES
DIM	MIN	MAX	MIN	MAX
b2	-	0.37	_	0.015
e1	1.25		0.0	49
- 11	_	0.45	-	0.018

Dimension in mm/inches



Dimensions



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

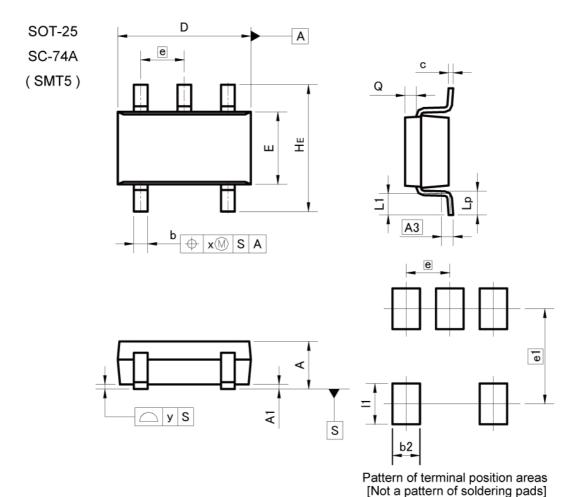
DIM	MILIM	ETERS	INC	HES
DIM	MIN	MAX	MIN	MAX
Α	0.80	1.00	0.031	0.039
A1	0.00	0.10	0.000	0.004
A3	0.5	25	0.0	10
b	0.15	0.30	0.006	0.012
С	0.10	0.20	0.004	0.008
D	1.90	2.10	0.075	0.083
E	1.15	1.35	0.045	0.053
е	0.0	65	0.026	
HE	2.00	2.20	0.079	0.087
L1	0.20	0.50	0.008	0.020
Lp	0.25	0.55	0.010	0.022
Q	0.10	0.30	0.004	0.012
х	-	0.10	-	0.004
У	-	0.10	-	0.004

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

Dimension in mm/inches



Dimensions



MILIMETERS INCHES DIM MIN MIN MAX MAX 0.051 1.30 0.039 Α 1.00 0.00 0.000 0.004 A1 0.10 0.25 0.010 A3 0.25 0.40 0.010 0.016 b С 0.09 0.25 0.004 0.010 D 2.80 3.00 0.110 0.118 Ε 1.50 1.80 0.059 0.071 е HE 2.60 3.00 0.102 0.118 L1 0.30 0.60 0.012 0.024 0.40 0.70 0.016 0.028 Lp 0.20 0.30 0.008 0.012 Q 0.20 0.008

INCHES MILIMETERS DIM MIN MIN MAX MAX b2 0.60 0.024 2.10 0.083 e1 0.90 0.035 11

0.10

Dimension in mm/inches

X

У



0.004

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CLASSIV	CLASSⅢ	CLASSⅢ	- CLASSIII

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 - [d] Use of our Products in places where the Products are exposed to static electricity or electromagnetic waves
 - [e] Use of our Products in proximity to heat-producing components, plastic cords, or other flammable items
 - [f] Sealing or coating our Products with resin or other coating materials
 - [g] Use of our Products without cleaning residue of flux (even if you use no-clean type fluxes, cleaning residue of flux is recommended); or Washing our Products by using water or water-soluble cleaning agents for cleaning residue after soldering
 - [h] Use of the Products in places subject to dew condensation
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 - [b] the temperature or humidity exceeds those recommended by ROHM
 - [c] the Products are exposed to direct sunshine or condensation
 - [d] the Products are exposed to high Electrostatic
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- 3. Store / transport cartons in the correct direction, which is indicated on a carton with a symbol. Otherwise bent leads may occur due to excessive stress applied when dropping of a carton.
- 4. Use Products within the specified time after opening a humidity barrier bag. Baking is required before using Products of which storage time is exceeding the recommended storage time period.

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