

Parameter	DTr1 and DTr2
$V_{CC}$	50V
$I_{C(MAX.)}$	100mA
$R_1$	4.7k $\Omega$
$R_2$	47k $\Omega$

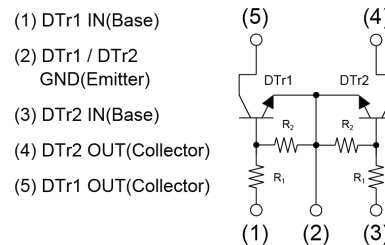
### ●Features

- 1)Two DTC143Z chips in a EMT or UMT package.
- 2)Mounting cost and area can be cut in half.

### ●Outline

SOT-553	SOT-353
EMG8 (EMT5)	UMG8N (UMT5)

### ●Inner circuit



### ●Application

INVERTER, INTERFACE, DRIVER

### ●Packaging specifications

Part No.	Package	Package size	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit.(pcs)	Marking
EMG8	SOT-553 (EMT5)	1616	T2R	180	8	8000	G8
UMG8N	SOT-353 (UMT5)	2021	TR	180	8	3000	G8

● **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		$V_{IN}$	-5 to 30	V
Output current		$I_O$	100	mA
Collector current		$I_{C(MAX)}^{*1}$	100	mA
Power dissipation	EMG8	$P_D^{*2*3}$	150	mW/Total
	UMG8N	$P_D^{*2*3}$	150	
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	$V_{I(off)}$	$V_{CC} = 5V, I_O = 100\mu\text{A}$	-	-	0.5	V
	$V_{I(on)}$	$V_O = 0.3V, I_O = 5\text{mA}$	1.3	-	-	
Output voltage	$V_{O(on)}$	$I_O = 5\text{mA}, I_I = 0.25\text{mA}$	-	100	300	mV
Input current	$I_I$	$V_I = 5V$	-	-	1.8	mA
Output current	$I_{O(off)}$	$V_{CC} = 50V, V_I = 0V$	-	-	500	nA
DC current gain	$G_I$	$V_O = 5V, I_O = 10\text{mA}$	80	-	-	-
Input resistance	$R_1$	-	3.29	4.7	6.11	k $\Omega$
Resistance ratio	$R_2/R_1$	-	8	10	12	-
Transition frequency	$f_T^{*1}$	$V_{CE} = 10V, I_E = -5\text{mA}, f = 100\text{MHz}$	-	250	-	MHz

\*1 Characteristics of built-in transistor.

\*2 Each terminal mounted on a reference land.

\*3 120mW 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)

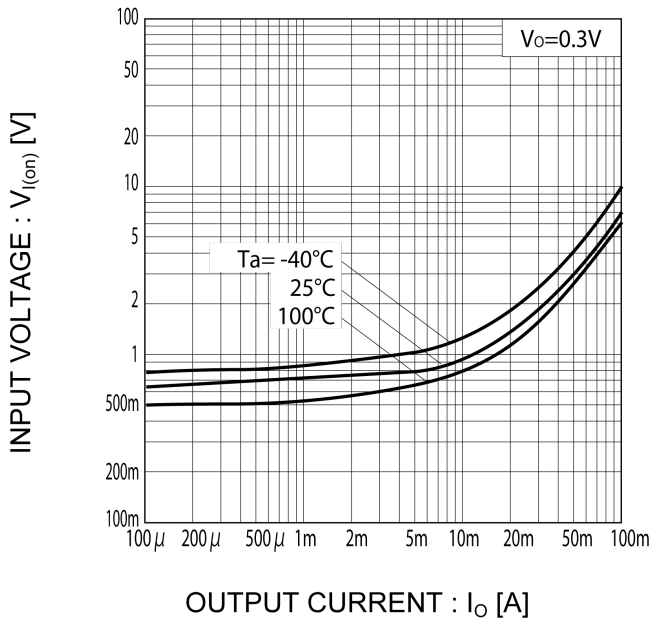


Fig.2 Output Current vs. Input Voltage  
 (OFF Characteristics)

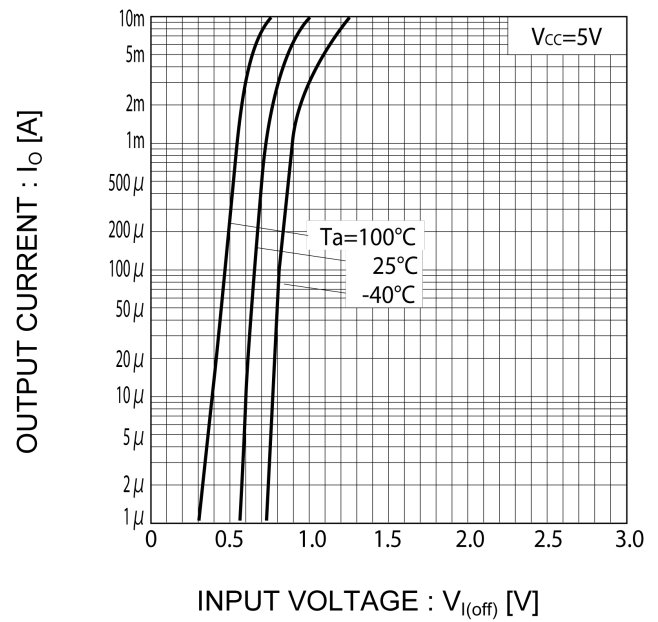


Fig.3 Output Current vs. Output Voltage

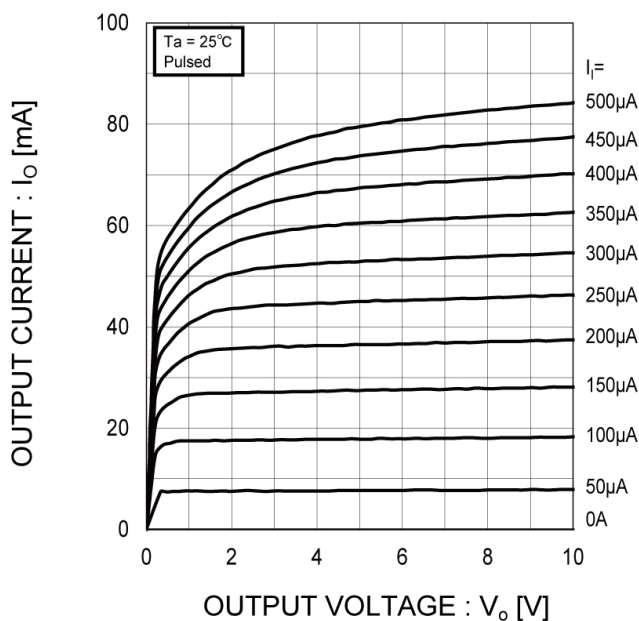
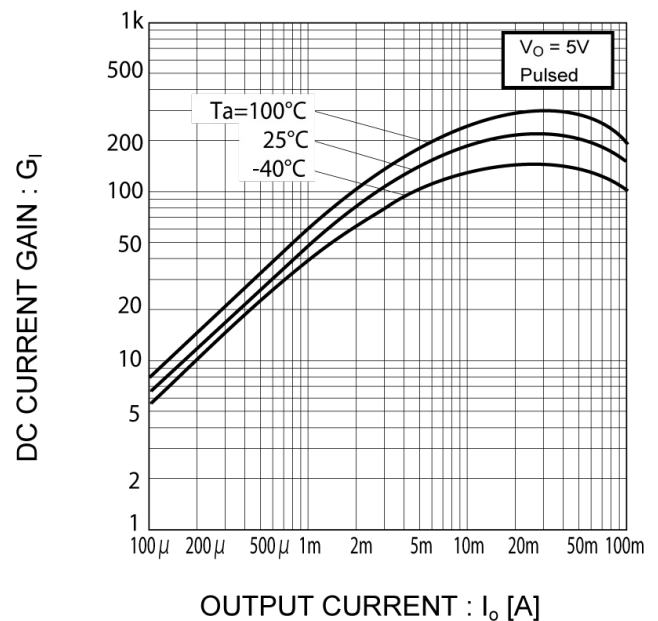


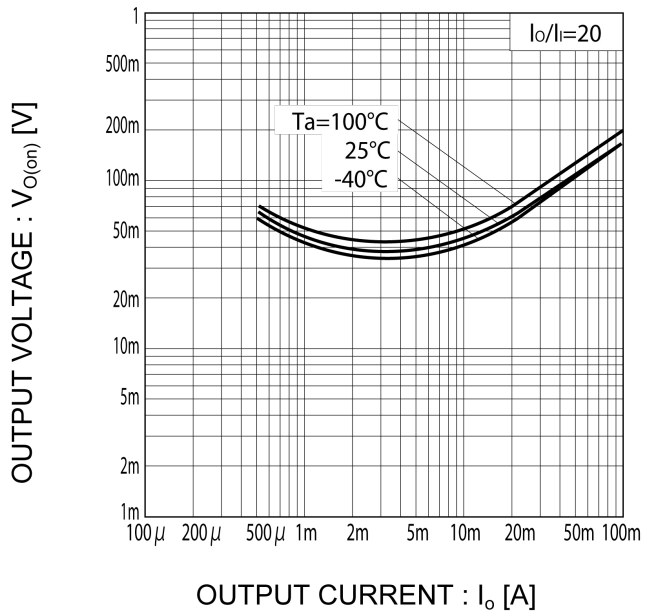
Fig.4 DC Current Gain vs. Output Current



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

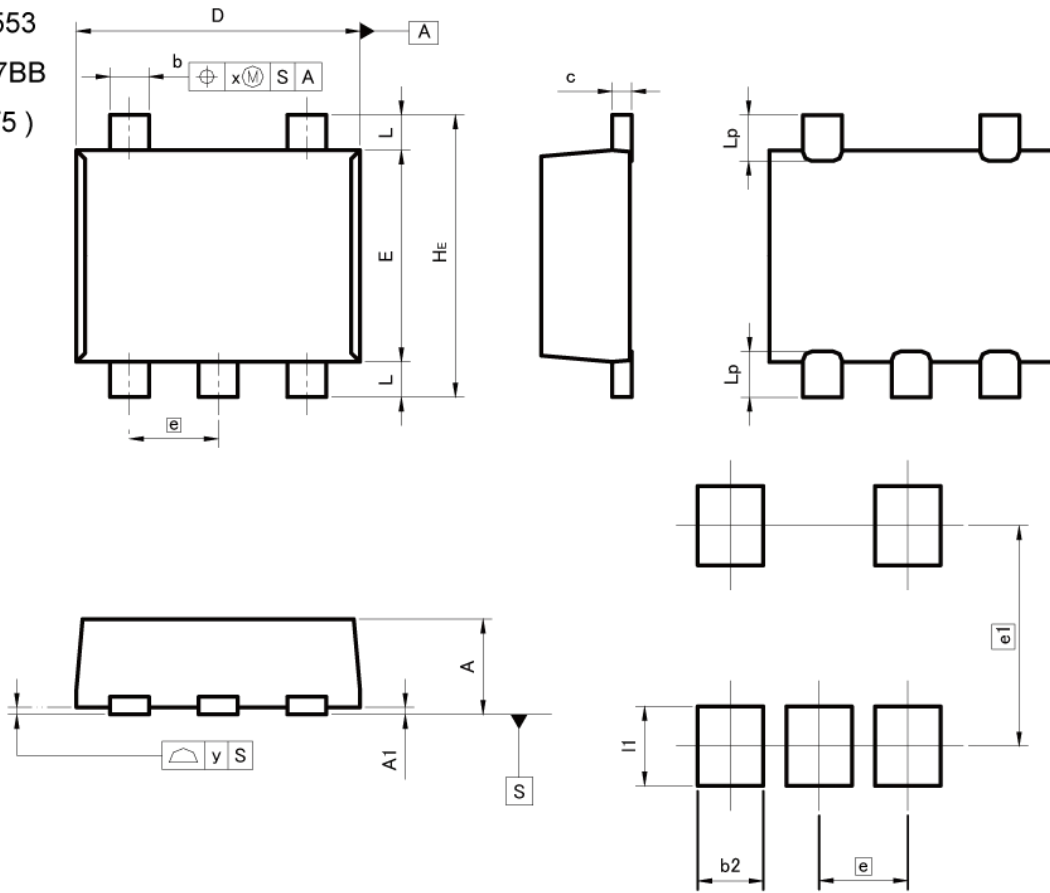
&lt;For DTr1 and DTr2 in common&gt;

Fig.5 Output Voltage vs. Output Current



●Dimensions

SOT-553  
SC-107BB  
( EMT5 )



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

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	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
c	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
e	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
x	-	0.10	-	0.004
y	-	0.10	-	0.004

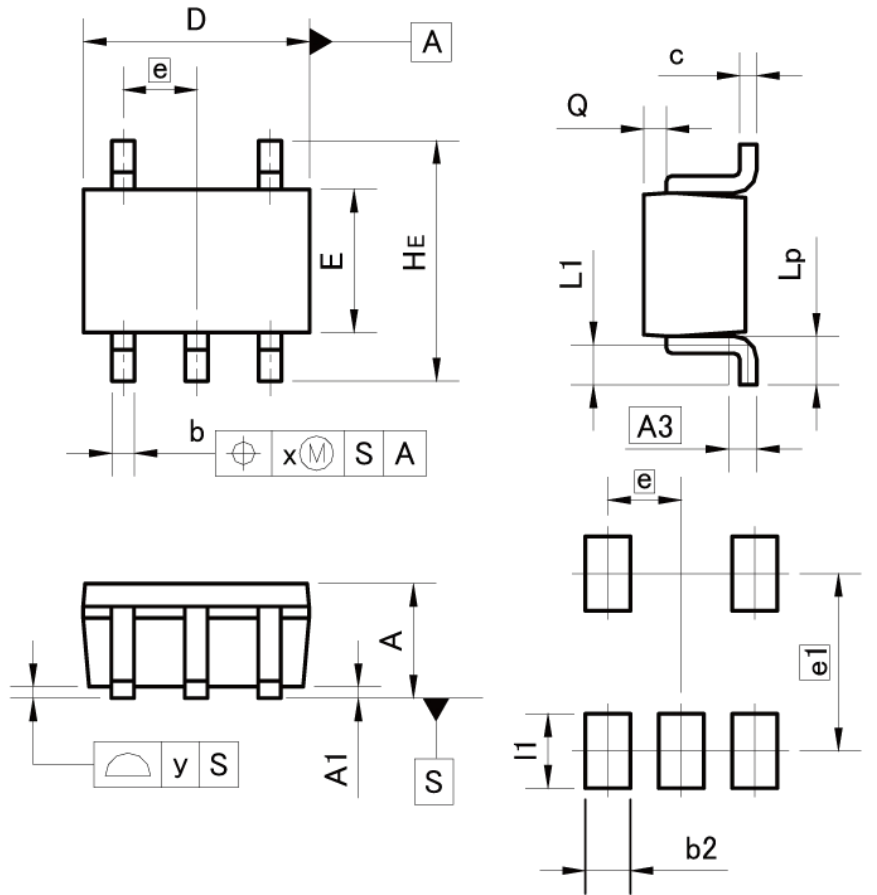
  

DIM	MILIMETERS		INCHES	
	MIN	MAX	MIN	MAX
b2	-	0.37	-	0.015
e1	1.25		0.049	
l1	-	0.45	-	0.018

Dimension in mm/inches

●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

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JAPAN	USA	EU	CHINA
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  - Use of the Products in places subject to dew condensation
- The Products are not subject to radiation-proof design.
- Please verify and confirm characteristics of the final or mounted products in using the Products.
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This Product is electrostatic sensitive product, which may be damaged due to electrostatic discharge. Please take proper caution in your manufacturing process and storage so that voltage exceeding the Products maximum rating will not be applied to Products. Please take special care under dry condition (e.g. Grounding of human body / equipment / solder iron, isolation from charged objects, setting of Ionizer, friction prevention and temperature / humidity control).

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