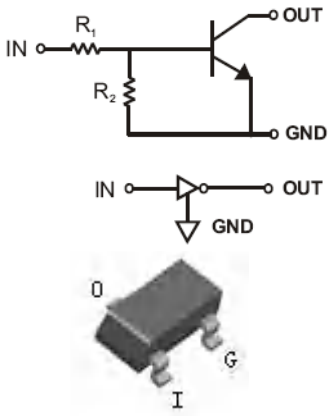
迈拓电子
MAITUO ELECTRONIC

Digital Transistor **DTC(R_1=R_2 SERIES)CA**

FEATURES

- Epitaxial planar die construction.
- Complementary PNP types available(DTA).
- Built-in biasing resistors,R_1=R_2.
- Also available in lead free version.



SOT-23

APPLICATIONS

- The NPN style digital transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
DTC114ECA	24	SOT-23
DTC124ECA	25	SOT-23
DTC143ECA	23	SOT-23
DTC144ECA	26	SOT-23

MAXIMUM RATING @ Ta=25℃ unless otherwise specified

Symbol	Parameter		Value	Units
V_{CC}	Supply Voltage		50	V
V_{IN}	Input Voltage	DTC114ECA DTC124ECA DTC143ECA DTC144ECA	-10 to+40 -10 to+40 -10 to+30 -10 to+40	V
I_O	Output Current	DTC114ECA DTC124ECA DTC143ECA DTC144ECA	50 30 100 100	mA
I_C(Max.)	Output current	ALL	100	mA
P_D	Power Dissipation		200	mW
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient Air		625	℃/W
T_j,T_{stg}	Operating and Storage and Temperature Range		-55 to +150	℃

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ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter		Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input Voltage		$V_{I(off)}$	V_{CC}=5V,I_O=100μA	0.5	1.1	-	V
Input Voltage	DTC114ECA DTC124ECA DTC143ECA DTC144ECA	$V_{I(on)}$	V_O=0.3V,I_O=10mA V_O=0.2V,I_O=5mA V_O=0.3V,I_O=20mA V_O=0.3V,I_O=2mA	-	1.9	3	
Output Voltage		$V_{O(on)}$	I_o/I_I=10mA/0.5mA,	-	0.1	0.3	V
Input Current	DTC114ECA DTC124ECA DTC143ECA DTC144ECA	I_I	V_I=5V	-	-	0.88 0.36 1.8 0.18	mA
Output Current		$I_{O(off)}$	V_{CC}=50V,V_I=0V	-	-	0.5	μA
DC Current Gain	DTC114ECA DTC124ECA DTC143ECA DTC144ECA	G_I	V_O=5V,I_O=5mA V_O=5V,I_O=5mA V_O=5V,I_O=10mA V_O=5V,I_O=5mA	30 56 20 68	-	-	
Input Resistor	DTC114ECA DTC124ECA DTC143ECA DTC144ECA	$R_1(R_2)$		7 15.4 3.29 32.9	10 22 4.7 47	13 28.6 6.11 61.1	kΩ
Resistance Ratio		R_2/R_1	-	0.8	1	1.2	
Gain-Bandwidth Product		f_T	V_{CE}=10V,I_E=-5mA, f=100MHz	-	250	-	MHz

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

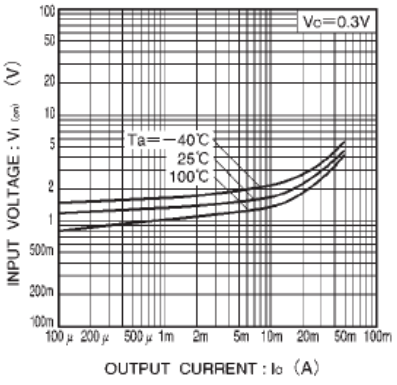

Fig.1 Input voltage vs. output current (ON characteristics)

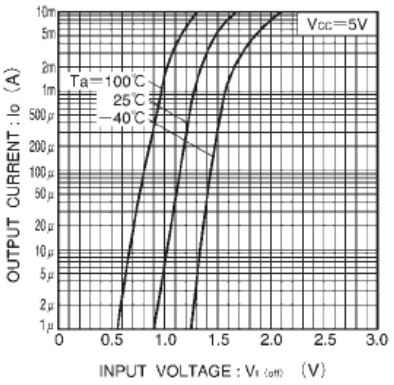

Fig.2 Output current vs. input voltage (OFF characteristics)

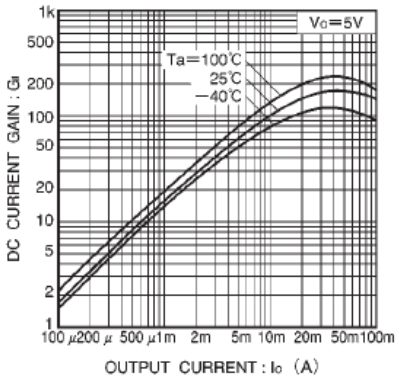

Fig.3 DC current gain vs. output current

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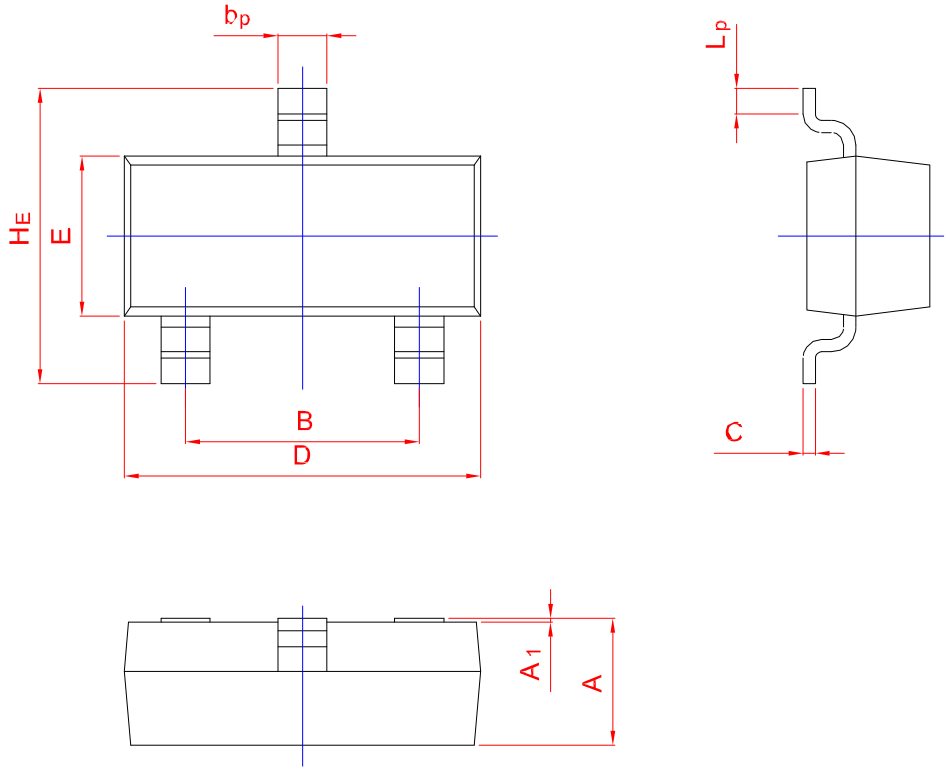
PACKAGE OUTLINE

Plastic surface mounted package; 3 leads **SOT-23**



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20