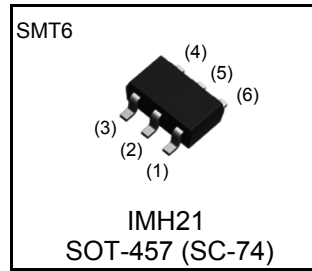


Parameter	Tr1 and Tr2
V_{CEO}	20V
V_{EBO}	12V
I_C	600mA
R_1	10k Ω

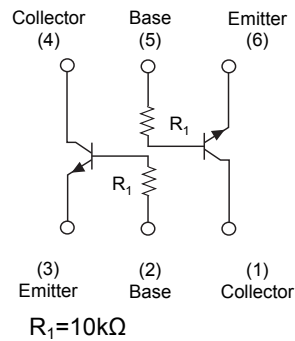
●Outline



●Features

- 1) Built-In Biasing Resistors
- 2) Two DTC614T chips in one package.
- 3) Low saturation voltage, typically $V_{CE(sat)}=40mV$ at $I_C / I_B=50mA / 2.5mA$, makes these transistors ideal for muting circuits.
- 4) These transistors can be used at high current levels, $I_C=600mA$.
- 5) Built-in bias resistors enable the configuration of an inverter circuit without connecting external input resistors (see equivalent circuit).
- 6) The bias resistors consist of thin-film resistors with complete isolation to allow negative biasing of the input. They also have the advantage of completely eliminating parasitic effects.
- 7) Lead Free/RoHS Compliant.

●Inner circuit



●Application

Muting circuit

●Packaging specifications

Part No.	Package	Package size (mm)	Taping code	Reel size (mm)	Tape width (mm)	Basic ordering unit (pcs)	Marking
IMH21	SMT6	2928	T110	180	8	3,000	H21

● **Absolute maximum ratings** (Ta = 25°C)

<For Tr1 and Tr2 in common>

Parameter	Symbol	Values	Unit
Collector-base voltage	V_{CBO}	20	V
Collector-emitter voltage	V_{CEO}	20	V
Emitter-base voltage	V_{EBO}	12	V
Collector current	I_C	600	mA
	I_{CP}^{*1}	1	A
Power dissipation	P_D^{*2}	300(Total) ^{*3}	mW
Junction temperature	T_j	150	°C
Range of storage temperature	T_{stg}	-55 to +150	°C

● **Electrical characteristics** (Ta = 25°C)

<For Tr1 and Tr2 in common>

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Collector-base breakdown voltage	BV_{CBO}	$I_C = 50\mu A$	20	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = 1mA$	20	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = 50\mu A$	12	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB} = 20V$	-	-	0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 12V$	-	-	0.5	μA
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C / I_B = 50mA / 2.5mA$	-	40	150	mV
DC current gain	h_{FE}	$V_{CE} = 5V, I_C = 50mA$	820	-	2700	-
Input resistance	R_1	-	7	10	13	k Ω
Transition frequency	f_T^{*4}	$V_{CE} = 10V, I_E = -50mA$ $f = 100MHz$	-	150	-	MHz
Output ON Resistance	R_{on}	$V_I = 5V$ $R_L = 1k\Omega, f = 1kHz$	-	0.9	-	Ω

*1 $P_W = 10ms$, Single pulse

*2 Each terminal mounted on a reference footprint

*3 200mW per element must not be exceeded.

*4 Characteristics of built-in transistor

●Electrical characteristic curves(Ta = 25°C)

Fig.1 Grounded emitter propagation characteristics

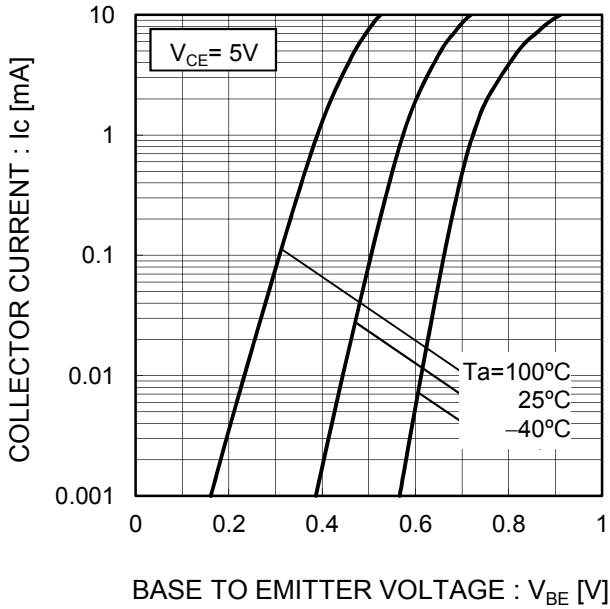


Fig.2 Grounded emitter output characteristics

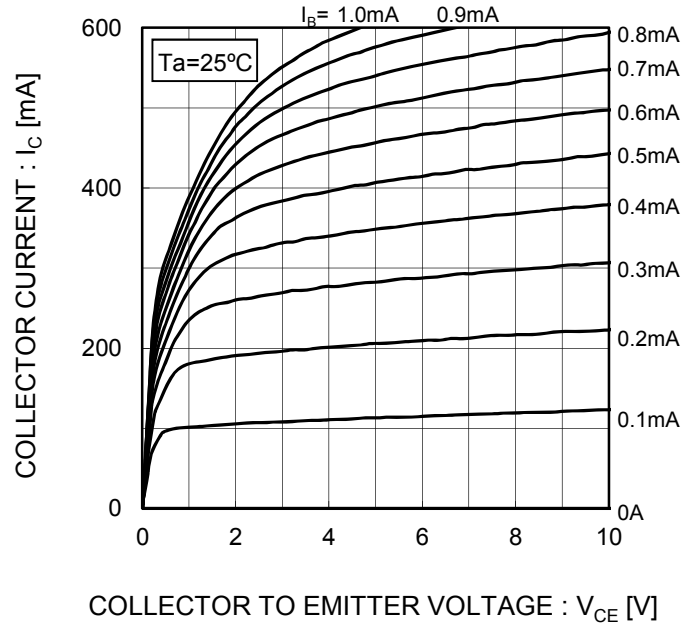


Fig.3 DC Current gain vs. Collector Current

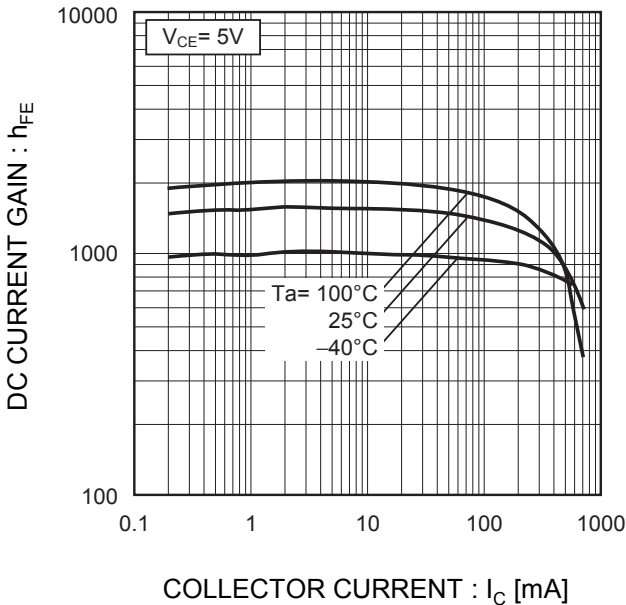
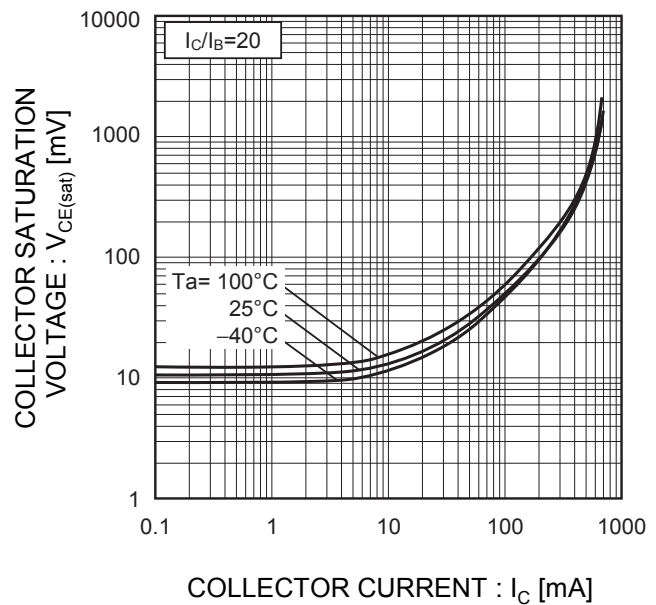


Fig.4 Collector-emitter saturation voltage vs. Collector Current



●Electrical characteristic curves(Ta = 25°C)

Fig.5 Output ON resistance vs. input voltage

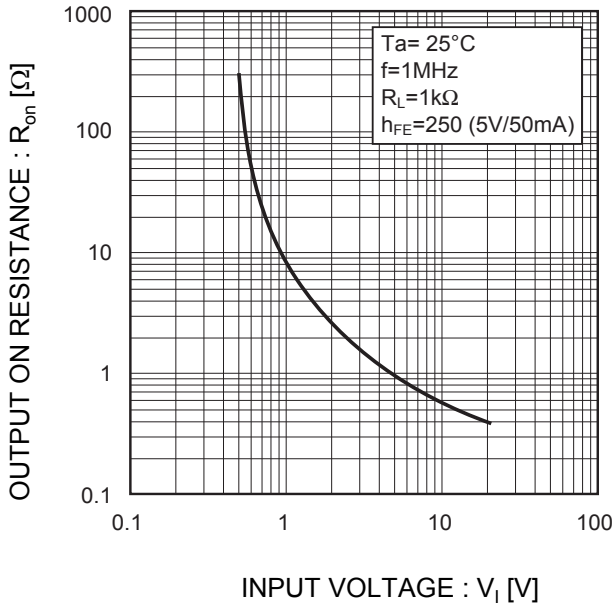
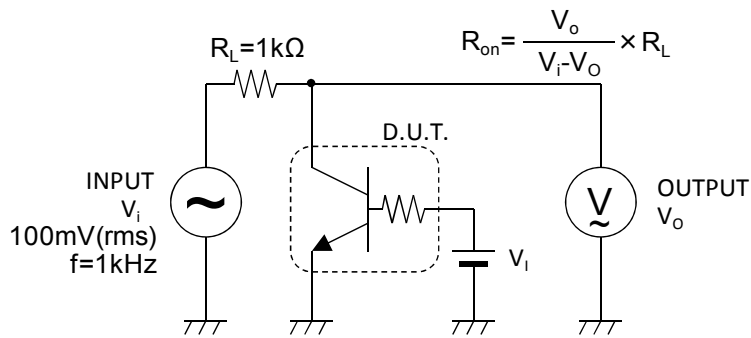
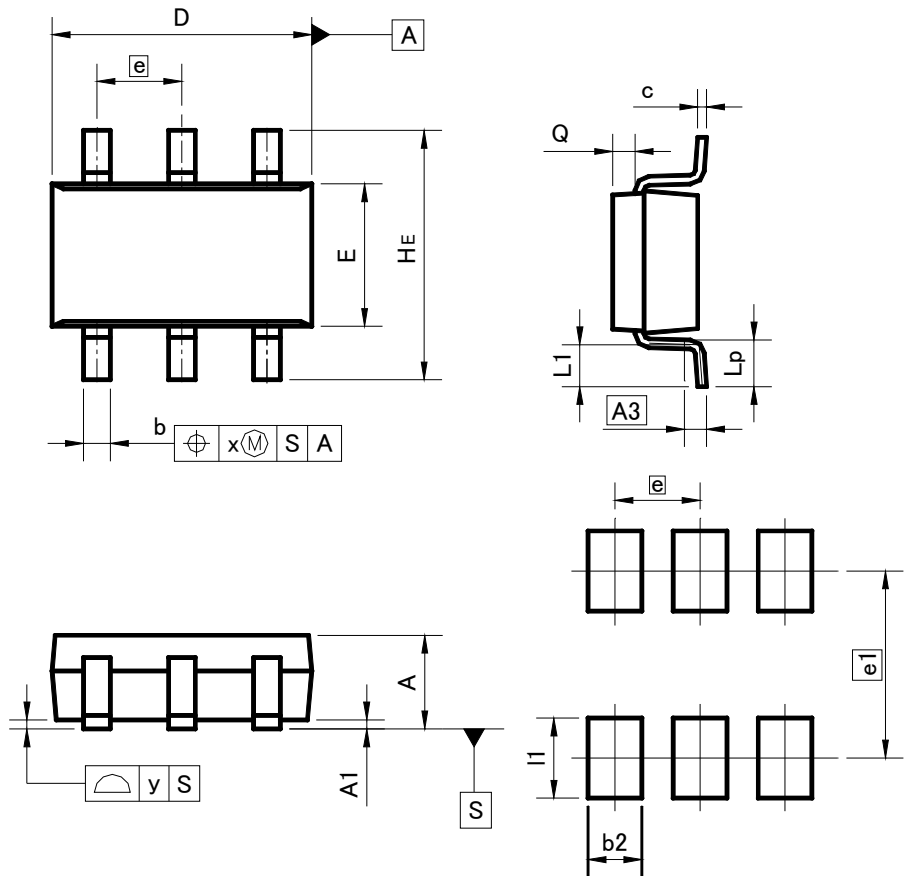


Fig.6 Ron measurement circuit.



●Dimensions (Unit : mm)

SMT6



Pattern of terminal position areas
[Not a recommended 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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