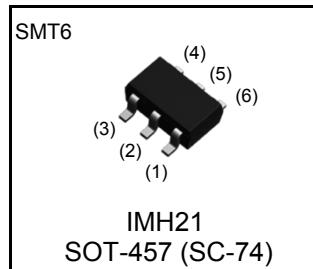


Parameter	Tr1 and Tr2
V_{CEO}	20V
V_{EBO}	12V
I_C	600mA
R_1	10k Ω

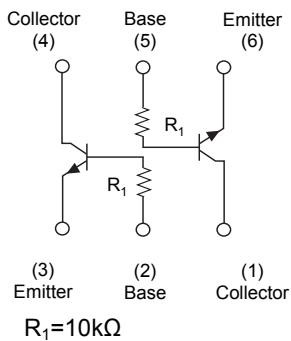
●Outline



●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 = 50μA	20	-	-	V
Collector-emitter breakdown voltage	BV _{CEO}	I _C = 1mA	20	-	-	V
Emitter-base breakdown voltage	BV _{EBO}	I _E = 50μA	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	kΩ
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 = 1kΩ, 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($T_a = 25^\circ\text{C}$)

Fig.1 Grounded emitter propagation characteristics

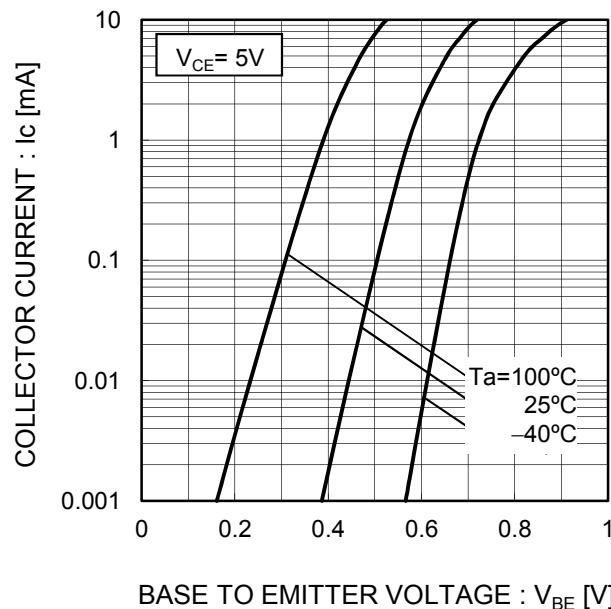


Fig.2 Grounded emitter output characteristics

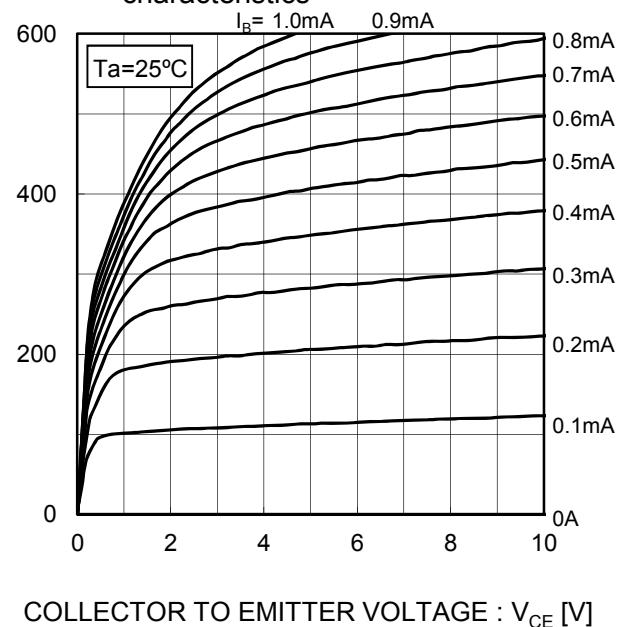


Fig.3 DC Current gain vs. Collector Current

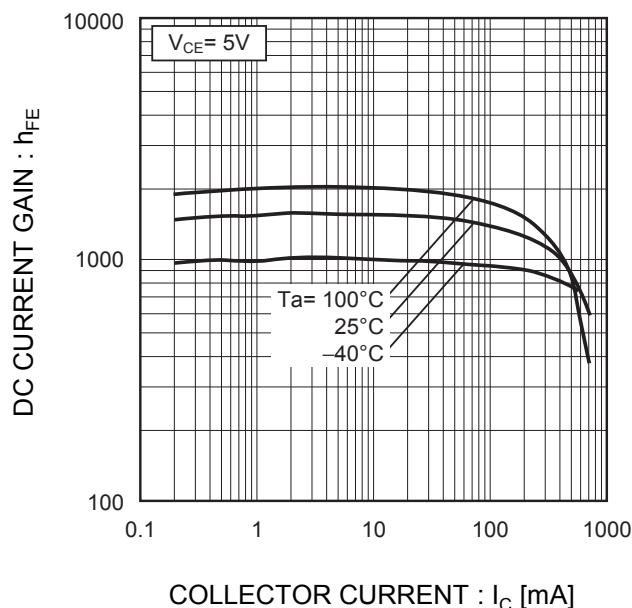
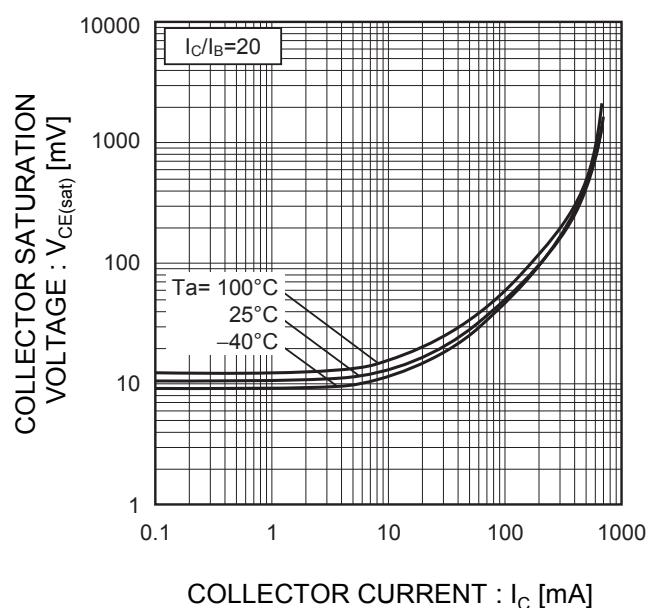


Fig.4 Collector-emitter saturation voltage vs. Collector Current



●Electrical characteristic curves(Ta = 25°C)

Fig.5 Output ON resistance
vs. input voltage

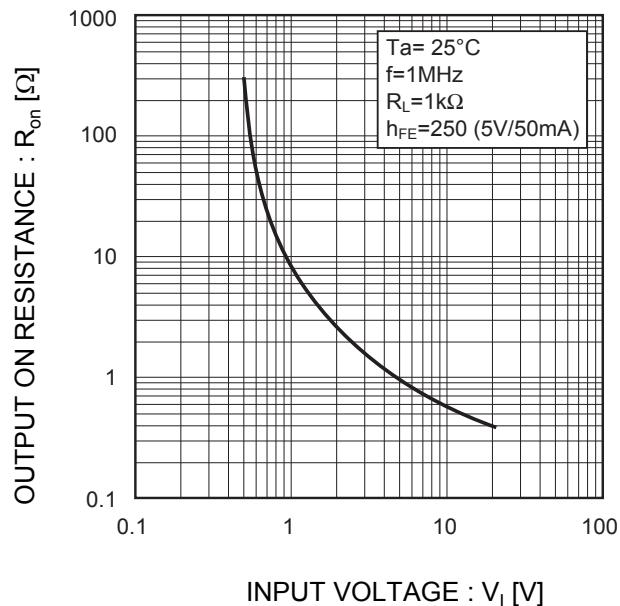
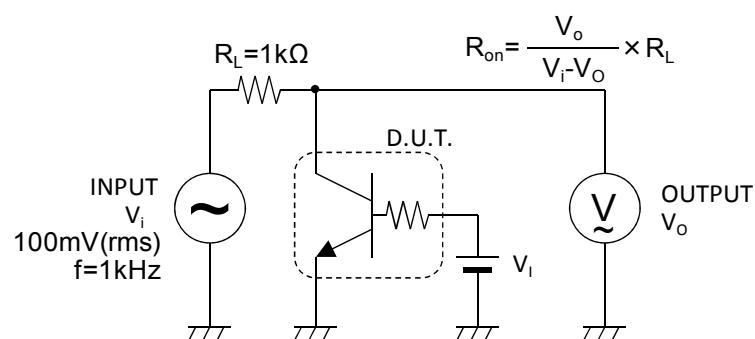
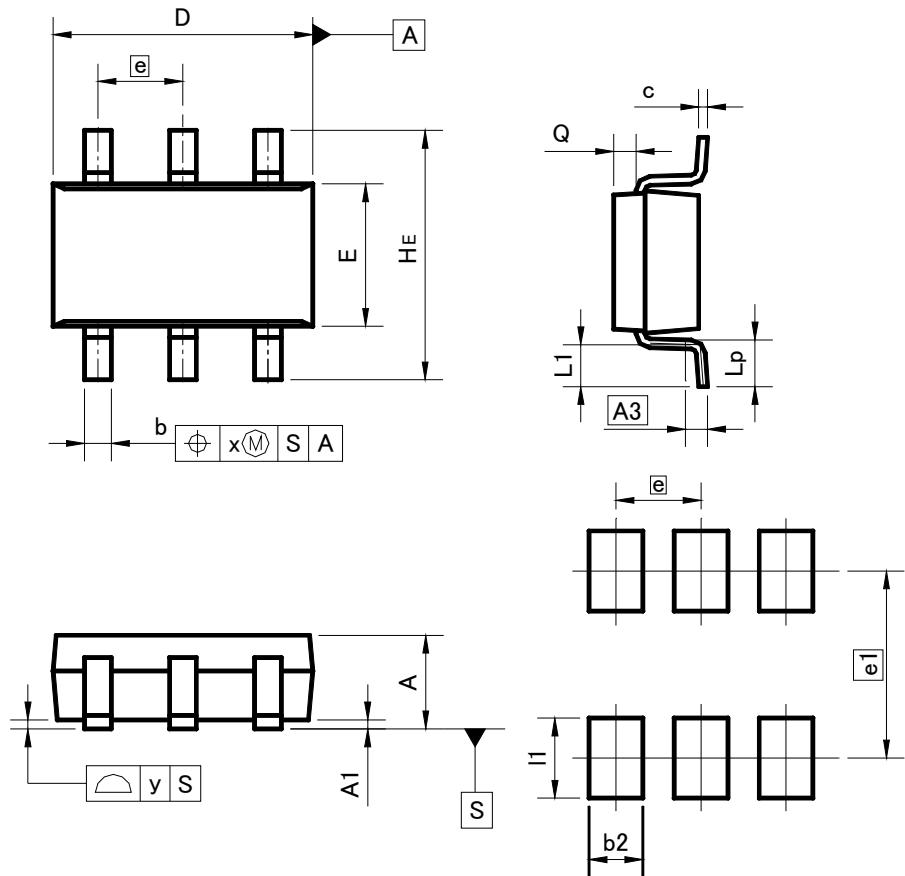


Fig.6 Ron measurement circuit.



●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	
H _E	2.60	3.00	0.102	0.118
L ₁	0.30	0.60	0.012	0.024
L _p	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
b ₂		0.60	—	0.024
e ₁	2.10		0.083	
I ₁	—	0.90	—	0.035

Dimension in mm / inches

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