Digital transistors (built-in resistor) DTC623TU / DTC623TK

Features

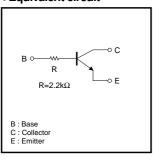
In addition to the features of regular digital transistors.

- 1) Low saturation voltage, typically VCE (sat) =40mV at Ic / IB=50mA / 2.5mA, makes these transistors ideal for muting circuits.
- 2) These transistors can be used at high current levels, lc=600mA.

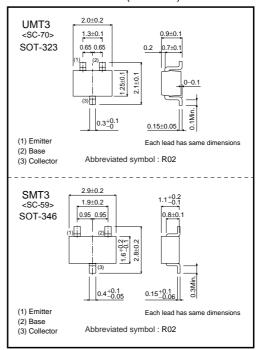
●Structure

NPN digital transistor (Built-in resistor type)

●Equivalent circuit



●External dimensions (Unit : mm)



● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V _{CBO}	20	V
Collector-emitter voltage	Vceo	20	V
Emitter-base voltage	V _{EBO}	12	V
Collector current	Ic	600	mA
Collector power dissipation	Pc	200	mW
Junction temperature	Tj	150	°C
Storage temperature	Tstg	-55 to +150	°C

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Collector-base breakdown voltage	ВУсво	20	_	-	V	Ic=50μA
Collector-emitter breakdown voltage	BVceo	20	_	_	٧	Ic=1mA
Emitter-base breakdown voltage	BV _{EBO}	12	_	_	٧	I _E =50μA
Collector cutoff current	Ісво	_	_	0.5	μΑ	V _{CB} =20V
Emitter cutoff current	I _{EBO}	_	_	0.5	μΑ	V _{EB} =12V
Collector-emitter saturation voltage	VCE (sat)	_	40	150	mV	Ic=50mA, Iв=2.5mA
DC current transfer ratio	h _{FE}	820	_	2700	_	V _{CE} =5V, I _C =50mA
Input resistance	R ₁	1.54	2.2	2.86	kΩ	_
Transition frequency	f⊤	_	150	_	MHz	V _{CE} =10V, I _E = -50mA, f=100MHz *
Output "ON" resistance	Ron	_	0.4	_	Ω	VI=5V, R _L =1kΩ, f=1kHz

^{*}Transition frequency of the device.

●Packaging specifications and hFE

	Package	UMT3	SMT3	
Type	Packaging type	Taping	Taping	
Type Code		T106	T146	
	Basic ordering unit (pieces)	3000	3000	
DTC623TU		0	-	
DTC623TK		_	0	

Electrical characteristic curves

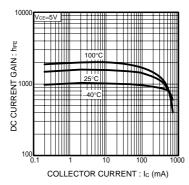


Fig.1 DC Current Gain vs. Collector Current

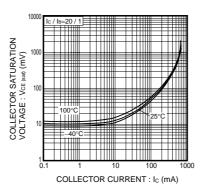


Fig.2 Collector-Emitter Saturation Voltage vs. Collector Current

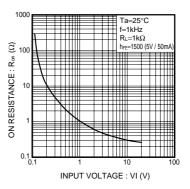


Fig.3 "ON" resistance vs. Input Voltage

●Ron measurement circuit

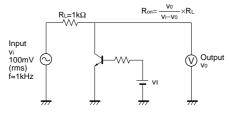


Fig.4 Output "ON" resistance (Ron) measurement circuit

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