General purpose (dual digital transistors)

UMD6N / IMD6A

●Features

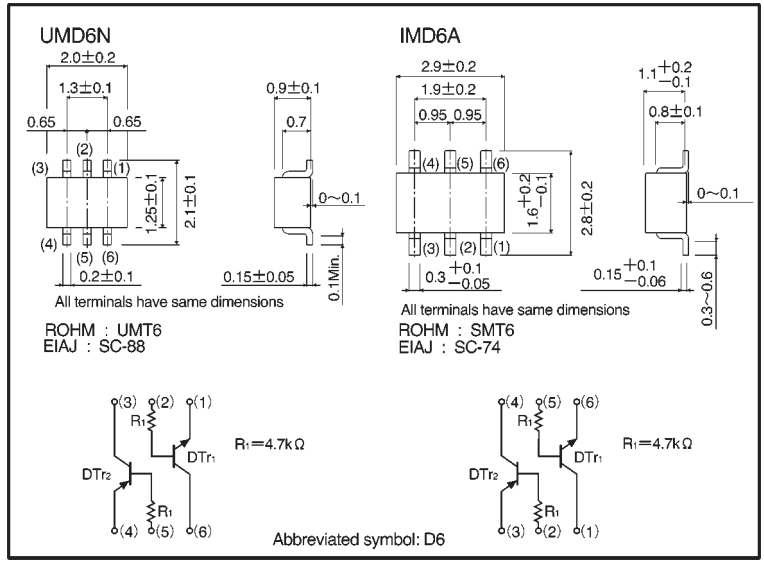
1) Both the DTA143T chip and DTC143T chip in a UMT or SMT package.
2) Mounting possible with UMT3 or SMT3 automatic mounting machines.
3) Transistor elements are independent, eliminating interference.
4) Mounting cost and area can be cut in half.

●Structure

A PNP and a NPN digital transistor (each with a single built in resistor)

The following characteristics apply to both DTr_1 and DTr_2, however, the "–" sign on DTr_2 values for the PNP type have been omitted.

●External dimensions (Units: mm)



●Absolute maximum ratings (Ta = 25°C)

Parameter		Symbol	Limits	Unit	
Collector-base voltage		V_{CBO}	50	V	
Collector-emitter voltage		V_{CEO}	50	V	
Emitter-base voltage		V_{EBO}	5	V	
Collector current		I_C	100	mA	
Collector power dissipation	UMD6N	P_C	150 (TOTAL)	mW	∗1
	IMD6A		300 (TOTAL)		∗2
Junction temperature		Tj	150	℃	
Storage temperature		Tstg	−55~+150	℃	

∗1 120mW per element must not be exceeded.
∗2 200mW per element must not be exceeded.

(96-467-AC143T)

●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	—	—	V	I_C=50 μA
Collector-emitter breakdown voltage	BV_{CEO}	50	—	—	V	I_C=1mA
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	I_E=50 μA
Collector cutoff current	I_{CBO}	—	—	0.5	μA	V_{CB}=50V
Emitter cutoff current	I_{EBO}	—	—	0.5	μA	V_{EB}=4V
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.3	V	I_C/I_B=5mA/0.25mA
DC current transfer ratio	h_{FE}	100	250	600	—	V_{CE}=5V, I_C=1mA
Transition frequency	f_T	—	250	—	MHz	V_{CE}=10mA, I_E=−5mA, f=100MHz ∗
Input resistance	R_1	3.29	4.7	6.11	kΩ	—

∗ Transition frequency of the transistor

●Packaging specifications

	Packaging type	Taping	
	Code	TR	T108
Part No.	Basic ordering unit (pieces)	3000	3000
UMD6N		○	—
IMD6A		—	○

●Electrical characteristic curves

DTr1 (NPN)

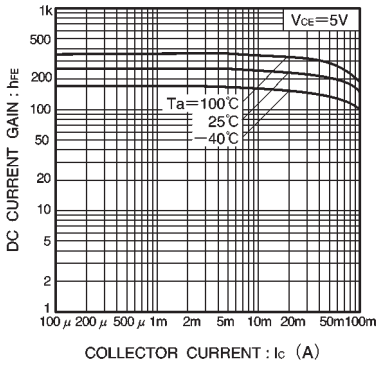


Fig.1 DC current gain vs. collector current

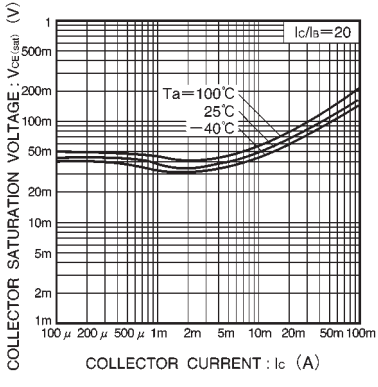


Fig.2 Collector-emitter saturation voltage vs. collector current

DTr2 (PNP)

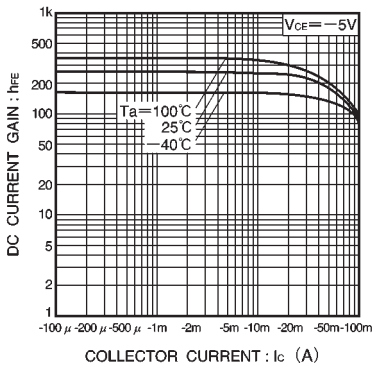


Fig.3 DC current gain vs. collector current

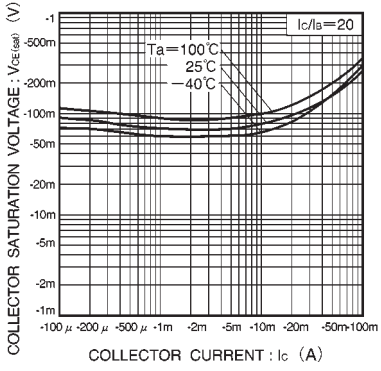


Fig.4 Collector-emitter saturation voltage vs. collector current