# General purpose transistor (isolated transistors) EMD29

DTB513Z and DTC114E A are housed independently in a EMT6 package.

#### Applications

DC / DC converter Motor driver

#### Features

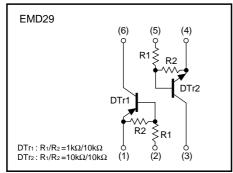
- 1) DTr1 : PNP digital transistor DTr2 : NPN digital transistor
- 2) Mounting possible with EMT3 automatic mounting machines.

#### Structure

PNP / NPN Silicon epitaxial planar digital transistor

The following characteristics apply to both DTr1 and DTr2.

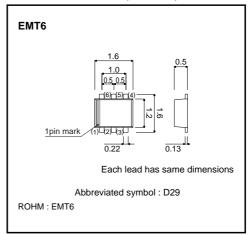
#### Equivalent circuit



#### Packaging specifications

Туре	EMD29
Package	EMT6
Marking	D29
Code	T2R
Basic ordering unit (pieces)	8000

#### •External dimensions (Unit : mm)



### •Absolute maximum ratings (Ta=25°C)

### DTr1

Symbol	DTr1	Unit
Vcc	–12	V
Vin	-10 to +5	V
IC (MAX.)	-500	mA
Pd	120	mW *
Tj	150	°C
Tstg	-55 to +150	°C
	Vcc ViN Ic (MAX.) Pd Tj	Vcc -12   VIN -10 to +5   Ic (MAX.) -500   Pd 120   Tj 150

\* Each terminal mounted on a recommended.

#### DTr2

Parameter	Symbol	DTr2	Unit	
Supply voltage	Vcc	50	V	
Input voltage	Vin	-10 to +40	V	
Output current	lo	50	- mA	
Oulput current	IC (MAX.)	100		
Power dissipation	Pd	120	mW *	
Junction temperature	Tj	150	°C	
Storage temperature	Tstg	-55 to +150	°C	

\* Each terminal mounted on a recommended.

#### DTr1/DTr2

Parameter	Symbol	Limits	Unit	
Power dissipation	Pd	150(TOTAL)	mW *	
Storage temperature	Tstg	-55 to +125	°C	

\* Each terminal mounted on a recommended.



# ●Electrical characteristics (Ta=25°C) DTr1

Parameter		Symbol	Min.	Тур.	Max.	Unit	Conditions
Input voltage		VI(off)	-	-	-0.3	V	Vcc= -5V / Io= -100uA
		VI(on)	-2.5	-	-	V	Vo= -0.3V / Io= -20mA
Output voltage		Vo(on)	-	-60	-300	mV	lo= −100mA, l⊨ −5mA
Input current		h	-	-	-6.4	mA	Vi=-5V
Output current		IO(off)	-	-	-0.5	μA	Vcc=-12V / Vi=0V
DC current gain		Gı	140	-	-	-	Vo= -2V / Io= -100mA
Transition frequency	*	f⊤	-	260	-	MHz	Vce= -10V / Ie=5mA, f=100MHz
Input resistance		R1	0.7	1.0	1.3	kΩ	-
Resistance ratio		R2/R1	8	10	12	-	_

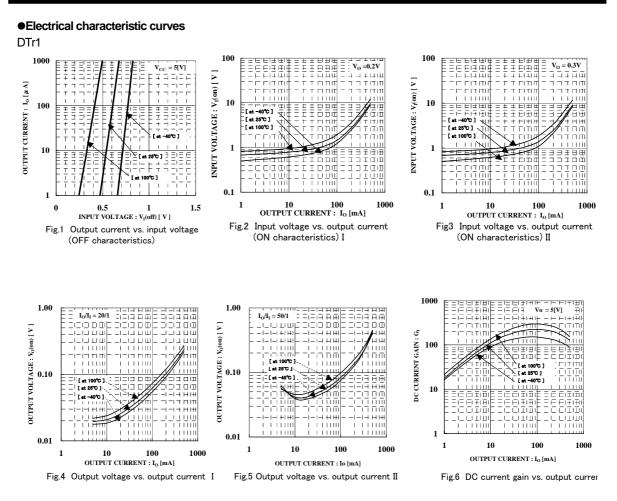
\* Characteristics of built-in transistor.

#### DTr2

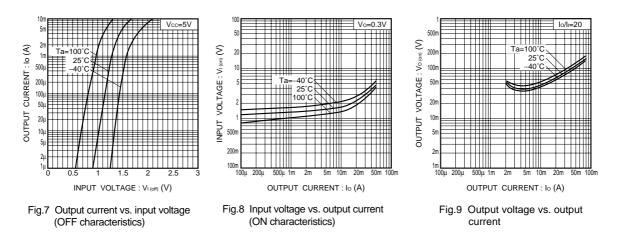
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
	VI(off)	-	-	0.5	V	Vcc=5V / Io=100uA
Input voltage	VI(on)	3	-	-	V	Vo=0.3V / Io=2mA
Output voltage	Vo(on)	-	100	300	mV	Io=10mA, I=0.5mA
Input current	h	-	-	880	μA	Vi=5V
Output current	IO(off)	-	-	0.5	μA	Vcc=50V / V=0V
DC current gain	Gi	30	-	-	-	Vo=5V / Io=5mA
Transition frequency *	f⊤	-	250	-	MHz	Vce=10V / Ie= -5mA, f=100MHz
Input resistance	R1	7	10	13	kΩ	-
Resistance ratio	R2/R1	0.8	1	1.2	-	-

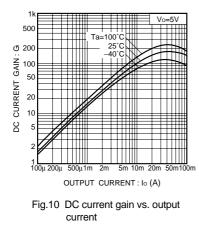
\* Characteristics of built-in transistor.

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DTr2







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