

Transistors

# General purpose (dual digital transistors)

## EMB19

●Features

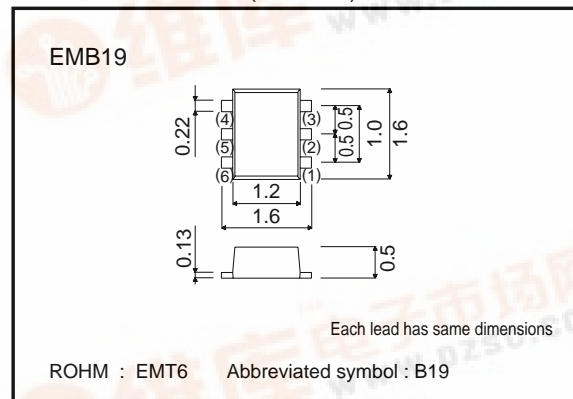
- 1) Two DTA115E chips in a EMT package.
- 2) Same size as EMT package, so same mounting machine can be used for both.
- 3) Transistor elements are independent, eliminating interference.

●Structure

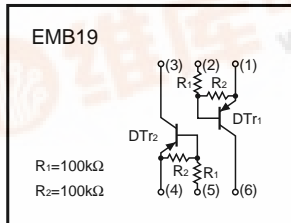
Epitaxial planar type  
PNP silicon transistor (Built-in resistor type)

The following characteristics apply to both DTTr1 and DTTr2.

●External dimensions (Unit : mm)



●Equivalent circuit



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V <sub>CC</sub>	-50	V
Input voltage	V <sub>IN</sub>	-40	V
		10	
Output current	I <sub>O</sub>	-30	mA
	I <sub>C (Max.)</sub>	-20	
Power dissipation	P <sub>d</sub>	150 (TOTAL)	mW *
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C

\* 120mW per element must not be exceeded.

Transistors

●Electrical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input voltage	$V_{I(off)}$	–	–	–0.5	V	$V_{CC} = -5V, I_o = -100\mu A$
	$V_{I(on)}$	–3	–	–		$V_o = -0.3V, I_o = -1mA$
Output voltage	$V_{O(on)}$	–	–0.1	–0.3	V	$I_o = -5mA, I_E = -0.25mA$
Input current	$I_I$	–	–	–0.15	mA	$V_E = -5V$
Output current	$I_{O(off)}$	–	–	–0.5	$\mu A$	$V_{CC} = -50V, V_E = 0V$
DC current gain	$G_I$	82	–	–	–	$I_o = -5mA, V_o = -5V$
Input resistance	$R_I$	70	100	130	k $\Omega$	–
Resistance ratio	$R_2/R_1$	0.8	1	1.2	–	–
Transition frequency	$f_T$	–	250	–	MHz	$V_{CE} = -10V, I_E = 5mA, f = 100MHz$ *

\*Transition frequency of the device.

●Packaging specifications

Type	Package	Taping
	Code	T2R
	Basic ordering unit (pieces)	8000
EMB19		○

●Electrical characteristic curves

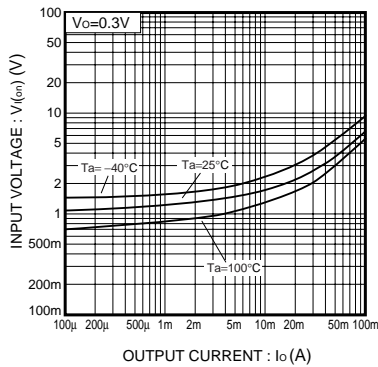


Fig.1 Input voltage vs. Output current (ON characteristics)

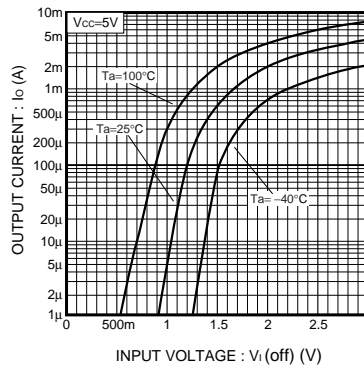


Fig.2 Output current vs. Input voltage (OFF characteristics)

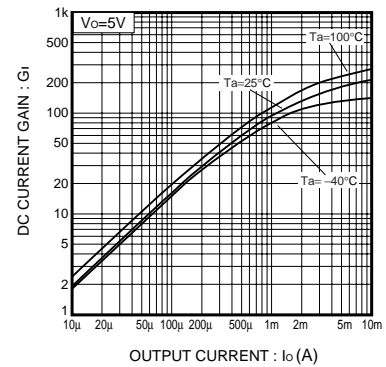


Fig.3 DC current gain vs. Output current

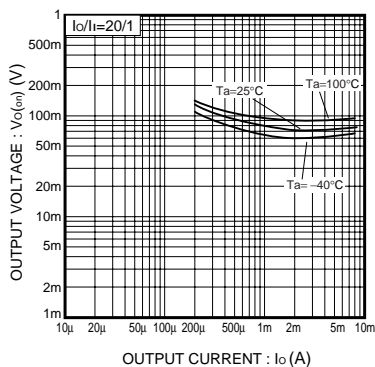


Fig.4 Output voltage vs. Output current

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