

Complex Digital Transistors

FMA1A

■ Features

- Mounting Cost and Area Can Be Cut In Half.
- Emitter-common Type.
- PNP Epitaxial Planar Silicon Transistor.

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

< For Tr1 and Tr2 in common >

Parameter	Symbol	Rating	Unit
Supply Voltage	V_{CC}	-50	V
Input Voltage	V_{IN}	-40 to +10	V
Output Current	I_O	-30	mA
Collector Current	$I_{C(Max)}$	-100	
Power Dissipation	P_D *	300	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* 200mW per element must not be exceeded.

■ Electrical Characteristics $T_a = 25^\circ\text{C}$

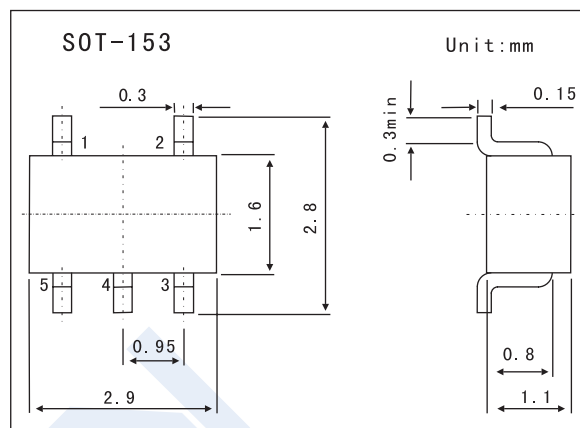
< For Tr1 and Tr2 in common >

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Input Voltage	$V_{I(off)}$	$V_{CC} = -5V, I_O = -100\mu A$			-0.5	V
	$V_{I(on)}$	$V_O = -0.2V, I_O = -5mA$	-3			
Output Voltage	$V_{O(on)}$	$I_O/I_I = -10mA/-0.5mA$		-0.1	-0.3	V
Input Current	I_I	$V_I = -5V$			-0.36	mA
Output Current	$I_{O(off)}$	$V_{CC} = -50V, V_I = 0V$			-0.5	μA
DC Current Gain	G_I	$V_O = -5V, I_O = -5mA$	56			
Input Resistance	R_1		15.4	22	28.6	k Ω
Resistance Ratio	R_2/R_1		0.8	1	1.2	
Transistion Frequency	f_T *	$V_{CE} = -10V, I_E = 5mA, f = 100MHz$		250		MHz

* Characteristics of built-in transistor

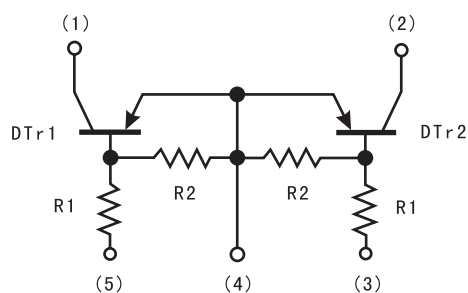
■ Marking

Marking	A1
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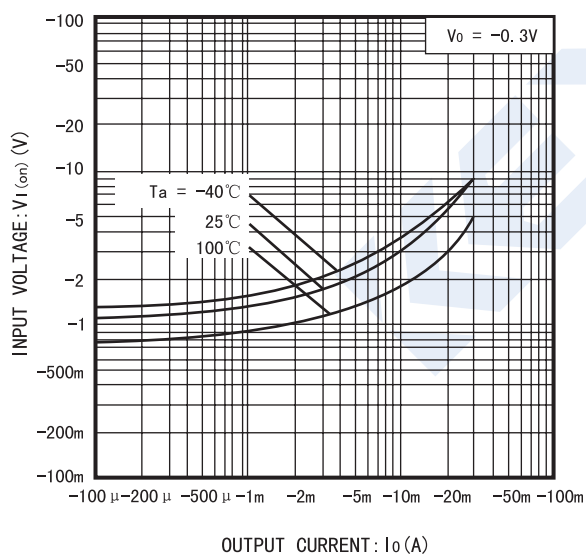
■ Equivalent Circuit



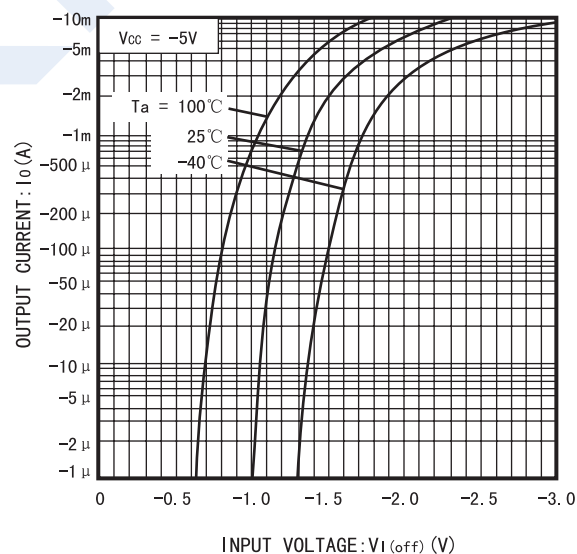
$$R1 = R2 = 22k\Omega$$

- (1) OUT
- (2) OUT
- (3) IN
- (4) GND
- (5) IN

■ Electrical Characteristics Curves

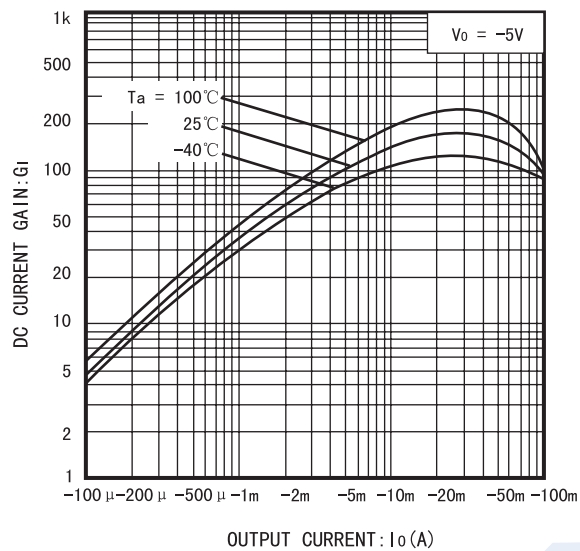


Input voltage vs. output current
(ON characteristics)

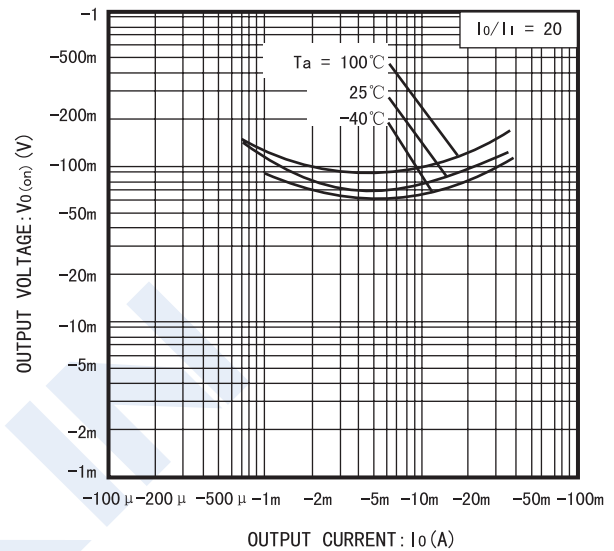


Output current vs. input voltage
(OFF characteristics)

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DC current gain vs. Output current



Output voltage vs. Output current