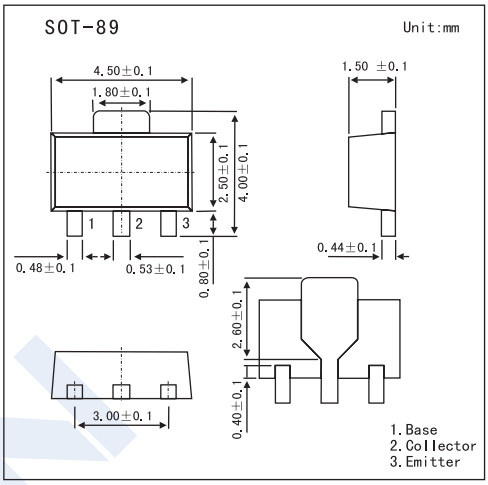
Digital Transistors

DTDG23YP



■ Features

- NPN Epitaxial Planar Silicon Transistor (with built-in resistors and zener diode).
- High DC Current Gain.
- Built-in Zener Diode Gives Strong Protection Against Reverse Surge By L-load (an inductive load).

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Supply Voltage	V_{CC}	60±10	V
Input Voltage	V_{IN}	-6 to +40	V
Collector Current	I_C	1	A
	I_{CP} *1	2	
Power Dissipation	P_D *2	1.5	W
Junction temperature	T_j	150	℃
Storage temperature	T_{stg}	-55 to +150	℃

*1 Pw≤10ms, Duty cycle≤2%

*2 When mounted on 40x40x0.7mm ceramic board.

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Input Voltage	$V_{I(off)}$	V_{CC} = 5V , I_O = 100μA			0.3	V
	$V_{I(on)}$	V_O = 0.4V , I_O = 100mA	2			
Output Voltage	$V_{O(on)}$	I_O/I_I = 500mA/5mA			0.4	V
Input Current	I_I	V_I = 5V			3.6	mA
Output Current	$I_{O(off)}$	V_{CC} = 40V , V_I = 0V			0.5	μA
DC Current Gain	G_I	V_O = 2V , I_O = 500mA	300			
Input Resistance	R_1		1.54	2.2	2.86	kΩ
Emitter-base Resistance	R_2		7	10	13	kΩ
Transistion Frequency	f_T *	V_{CE} = 5V , I_E = -0.1A , f = 30MHz		80		MHz

* Characteristics of built-in transistor

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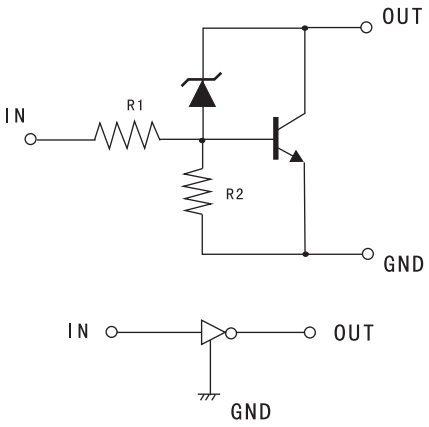
■ Marking

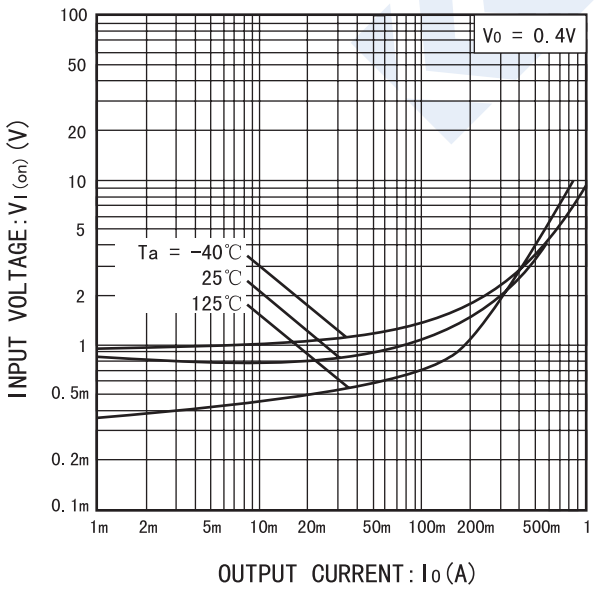
Marking	E02

■ Equivalent Circuit

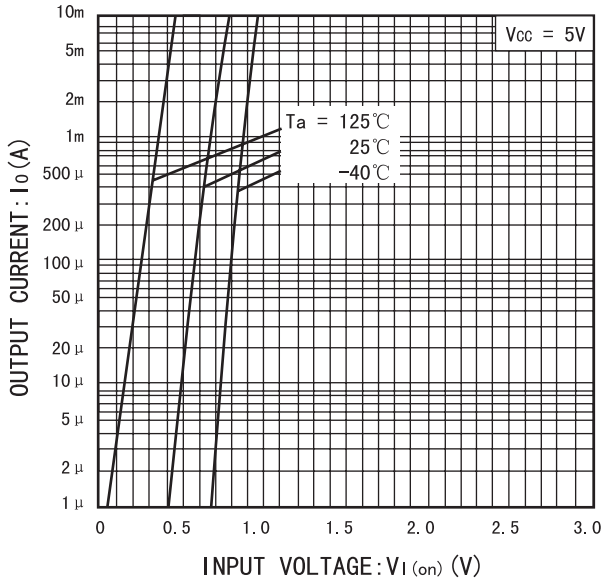


R_1 = 2.2kΩ R_2 = 10kΩ

■ Electrical Characteristics Curves



Input voltage vs. output current
(ON characteristics)



Output current vs. Input voltage
(OFF characteristics)

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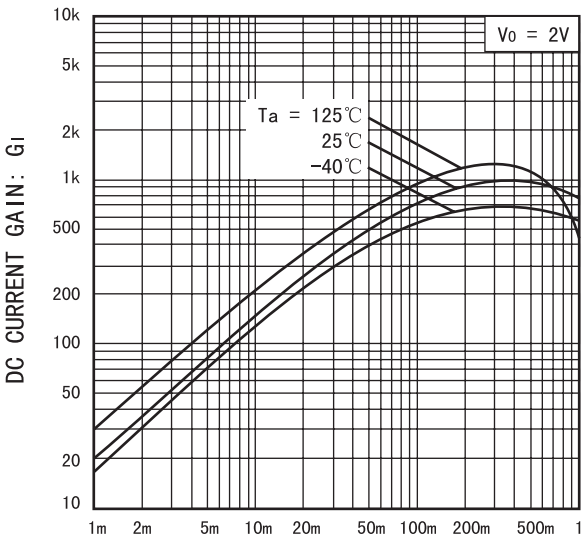
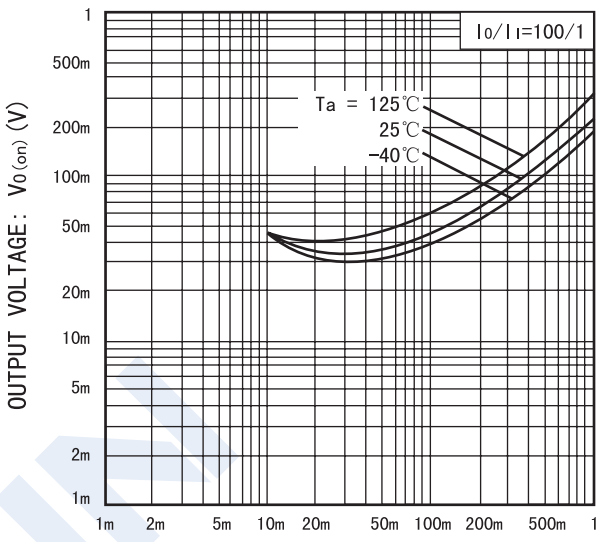


DC current gain vs. Output current



Output voltage vs. Output current