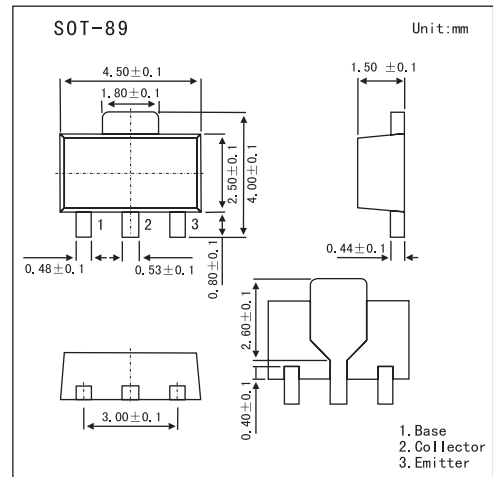


DTDG23YP

■ 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°C

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	°C
Storage temperature	T _{stg}	-55 to +150	°C

*1 P_w ≤ 10ms, Duty cycle ≤ 2%

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

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Input Voltage	V _{I(off)}	V _{CC} = 5V , I _o = 100 μA			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

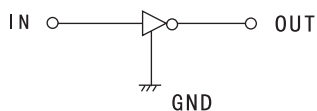
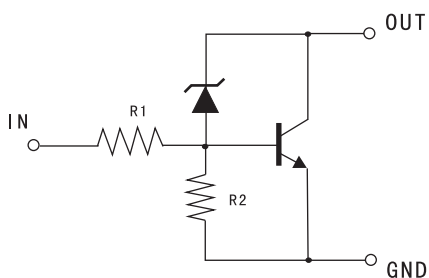


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■ Marking

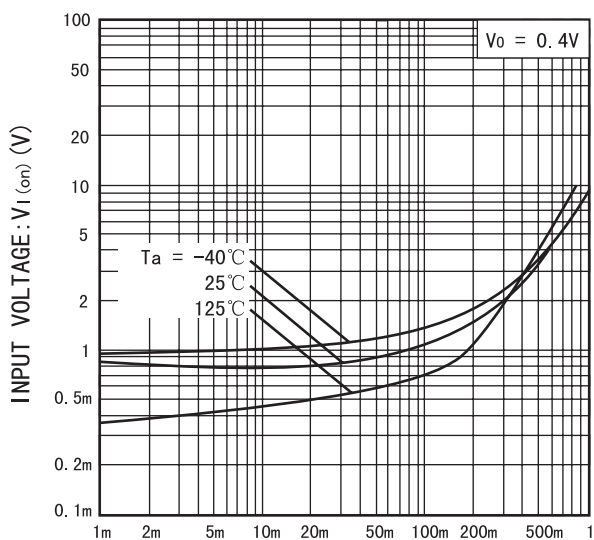
Marking	E02
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■ Equivalent Circuit

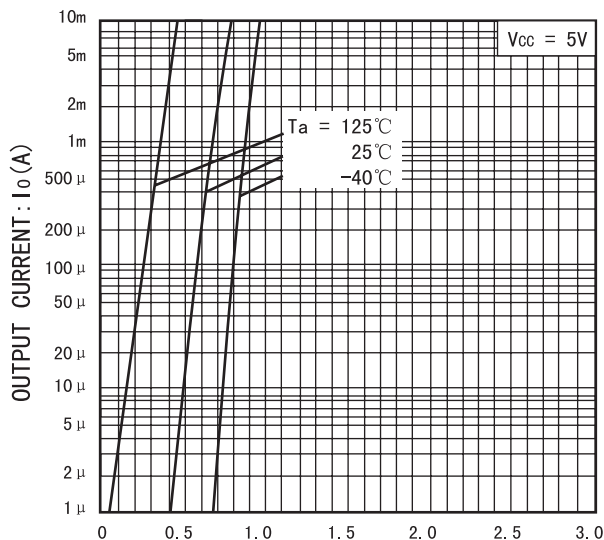


$R1 = 2.2k\Omega$ $R2 = 10k\Omega$

■ Electrical Characteristics Curves



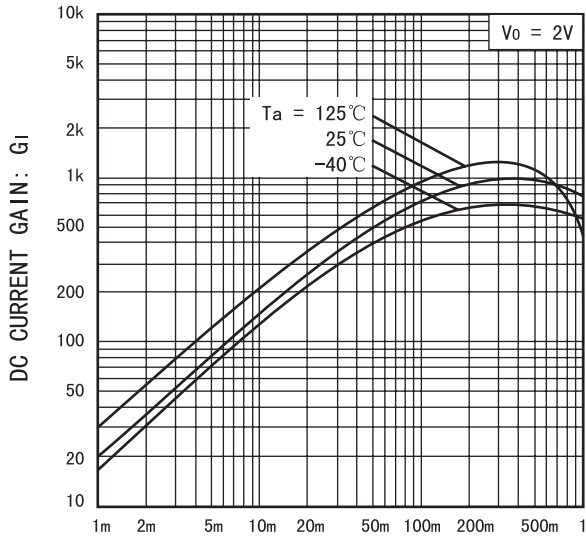
Input voltage vs. output current (ON characteristics)



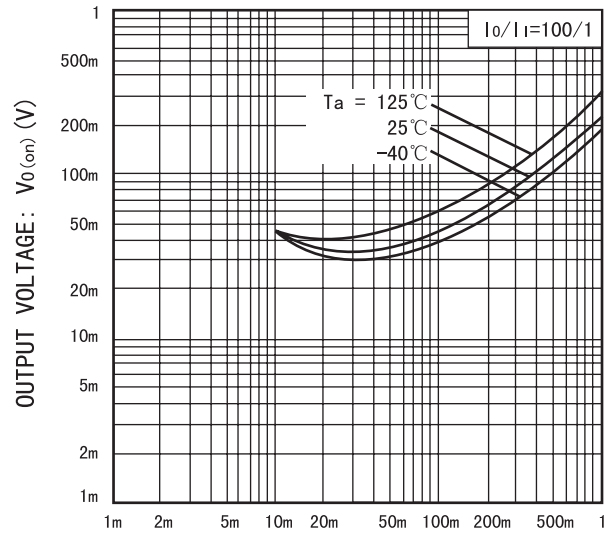
Output current vs. Input voltage (OFF characteristics)



DTDG23YP



DC current gain vs. Output current



Output voltage vs. Output current