

Digital transistor (built in resistor and zener diode) Driver (60V,1A)

DTDG14GP

●Features

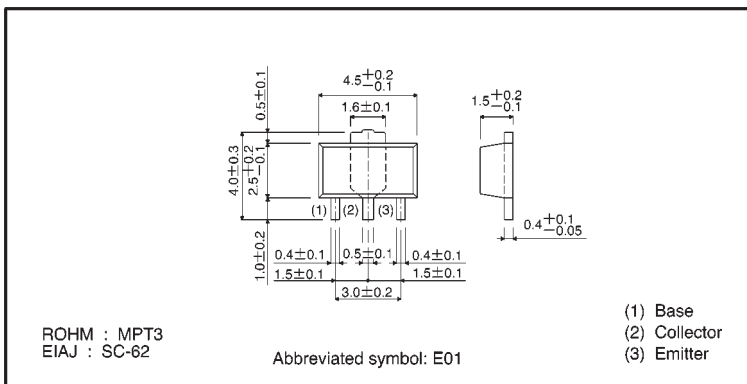
- 1) High h_{FE} , typically $h_{FE} = 750$ at $V_{CE} = 2V$ at $I_C = 0.5A$.
- 2) Low saturation voltage, typically $V_{CE(sat)} = 0.4V$ at $I_C/I_B = 500mA / 5mA$.
- 3) Built-in zener diode to protect the transistor against reverse voltages when connected to allow load.

●Structure

NPN digital transistor

(with single built in resistor and zener diode)

●External dimensions (Units: mm)



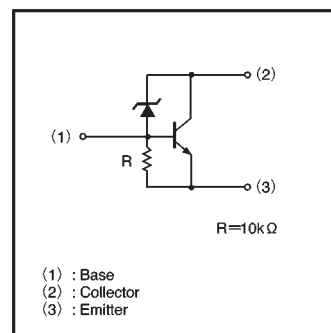
●Absolute maximum ratings ($T_a = 25^\circ C$)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V_{CBO}	60 ± 10	V
Collector-emitter voltage	V_{CEO}	60 ± 10	V
Emitter-base voltage	V_{EBO}	5	V
Collector current	I_C	1	A
	I_{CP}	2	A (Pulse) *1
Collector power dissipation	P_C	0.5	W
		2	
Junction temperature	T_j	150	$^\circ C$
Storage temperature	T_{stg}	$-55 \sim +150$	$^\circ C$

*1 $P_w \leq 10ms$, Duty cycle $\leq 1/2$

*2 When mounted on a $40 \times 40 \times 0.7$ mm ceramic board.

●Equivalent circuit



●Electrical characteristics (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV_{CBO}	50	—	70	V	$I_C=50\mu A$
Collector-emitter breakdown voltage	BV_{CEO}	50	—	70	V	$I_C=1mA$
Emitter-base breakdown voltage	BV_{EBO}	5	—	—	V	$I_E=720\mu A$
Collector cutoff current	I_{CBO}	—	—	0.5	μA	$V_{CB}=40V$
Emitter cutoff current	I_{EBO}	300	—	580	μA	$V_{EB}=4V$
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.4	V	$I_C/I_B=500mA/5mA$
DC current transfer ratio	h_{FE}	300	—	—	—	$V_{CE}=2V, I_C=500mA$
Emitter-base resistance	R	7	10	13	$k\Omega$	—
Transition frequency	f_T	—	80	—	MHz	$V_{CE}=5V, I_E=-0.1A, f=30MHz$ *

* Transition frequency of the device

●Packaging specifications

Part No.	Package	MPT3
	Packaging type	Taping
	Code	T100
	Basic ordering unit (pieces)	1000
DTDG14GP		○

●Electrical characteristic curves

