

NPN SILICON POWER TRANSISTOR ARRAY
LOW SPEED SWITCHING USE (DARLINGTON TRANSISTOR)
INDUSTRIAL USE

DESCRIPTION

The μ PA1476 is NPN silicon epitaxial Darlington Power Transistor Array that built in 4 circuits designed for driving solenoid, relay, lamp and so on.

FEATURES

- Easy mount by 0.1 inch of terminal interval.
- High h_{FE} for Darlington Transistor.
- Surge Absorber (Zener Diode) built in.

ORDERING INFORMATION

Part Number	Package	Quality Grade
μ PA1476H	10 Pin SIP	Standard

Please refer to "Quality grade on NEC Semiconductor Devices" (Document number IEI-1209) published by NEC Corporation to know the specification of quality grade on the devices and its recommended applications.

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

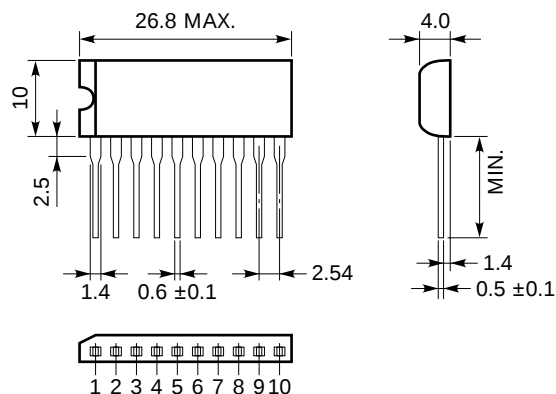
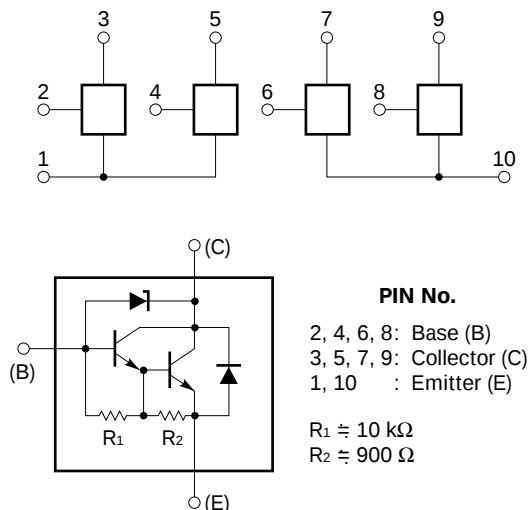
Collector to Base Voltage	V_{CBO}	100 ± 15	V
Collector to Emitter Voltage	V_{CEO}	100 ± 15	V
Emitter to Base Voltage	V_{EBO}	8	V
Collector Current (DC)	$I_{C(DC)}$	± 2	A/unit
Collector Current (pulse)	$I_{C(pulse)^*}$	± 3	A/unit
Base Current (DC)	$I_{B(DC)}$	0.2	A/unit
Total Power Dissipation	P_{T1}^{**}	3.5	W
Total Power Dissipation	P_{T2}^{***}	28	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

* $PW \leq 300 \mu\text{s}$, Duty Cycle $\leq 10 \%$

** 4 Circuits, $T_a = 25^\circ\text{C}$

*** 4 Circuits, $T_c = 25^\circ\text{C}$

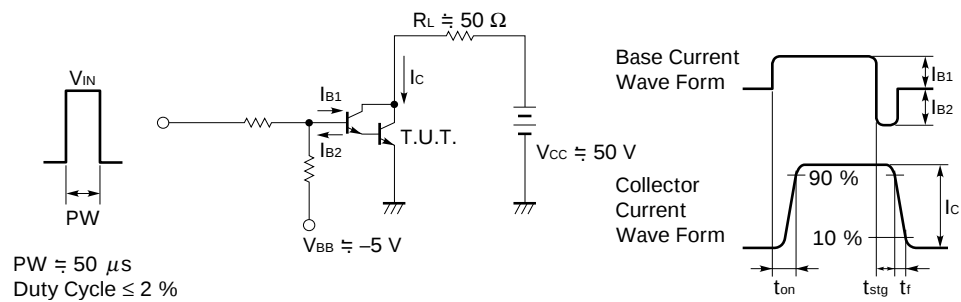
PACKAGE DIMENSION
(in millimeters)

**CONNECTION DIAGRAM**

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

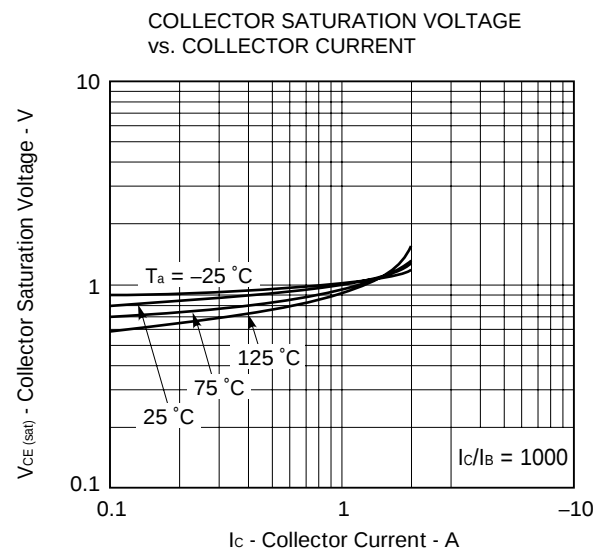
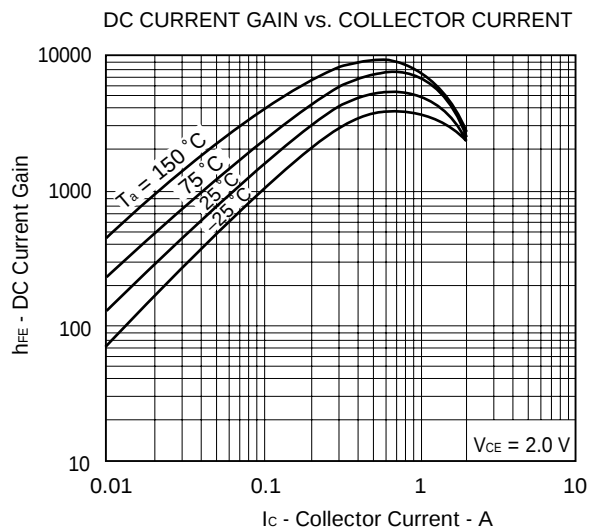
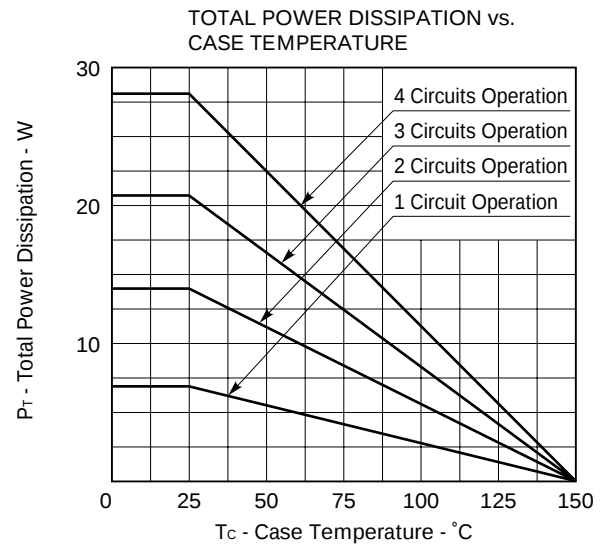
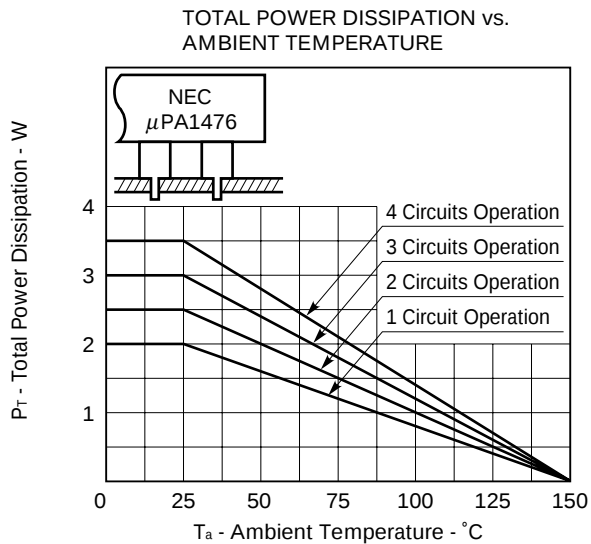
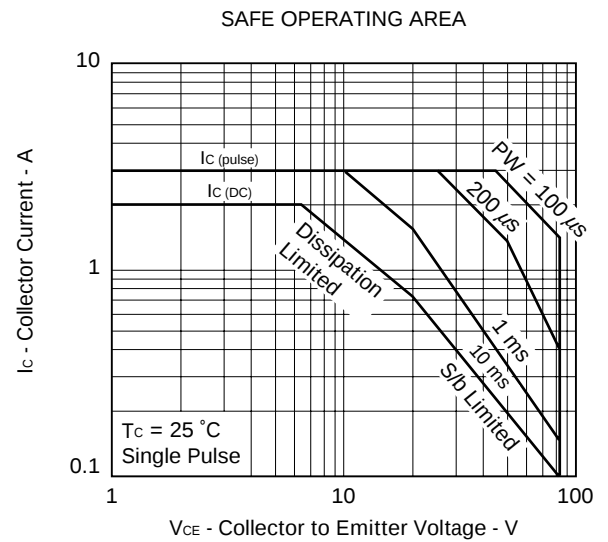
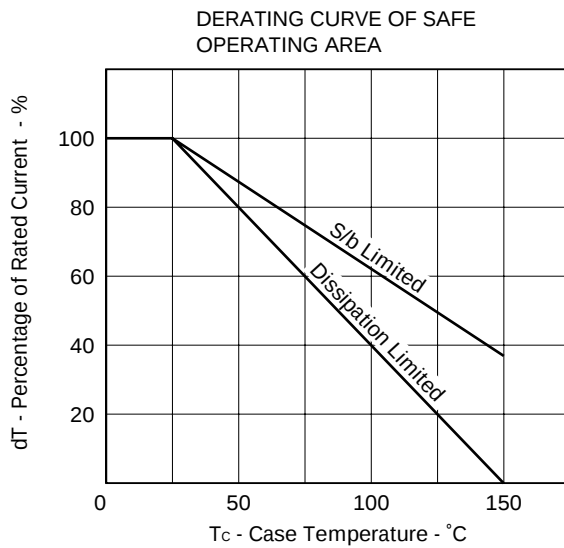
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Leakage Current	I_{CBO}			1.0	μA	$V_{CB} = 75\text{ V}$, $I_E = 0$
Emitter Leakage Current	I_{EBO}			1.0	mA	$V_{EB} = 5\text{ V}$, $I_C = 0$
DC Current Gain	h_{FE1} *	2000		20000	—	$V_{CE} = 2\text{ V}$, $I_C = 1\text{ A}$
DC Current Gain	h_{FE2} *	500			—	$V_{CE} = 2\text{ V}$, $I_C = 2\text{ A}$
Collector Saturation Voltage	$V_{CE(sat)}$ *			1.5	V	$I_C = 1\text{ A}$, $I_B = 1\text{ mA}$
Base Saturation Voltage	$V_{BE(sat)}$ *			2	V	$I_C = 1\text{ A}$, $I_B = 1\text{ mA}$
Turn On Time	t_{on}		1		μs	$I_C = 1\text{ A}$ $I_{B1} = -I_{B2} = 2\text{ mA}$ $V_{CC} \approx 50\text{ V}$, $R_L \approx 50\ \Omega$ See test circuit
Storage Time	t_{stg}		1.2		μs	
Fall Time	t_f		0.4		μs	

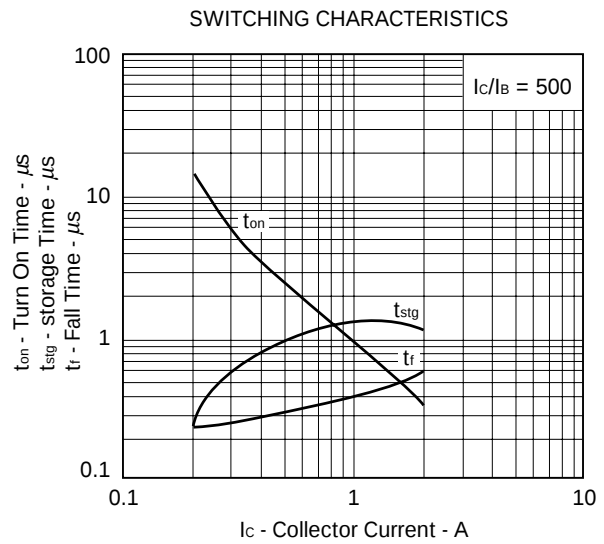
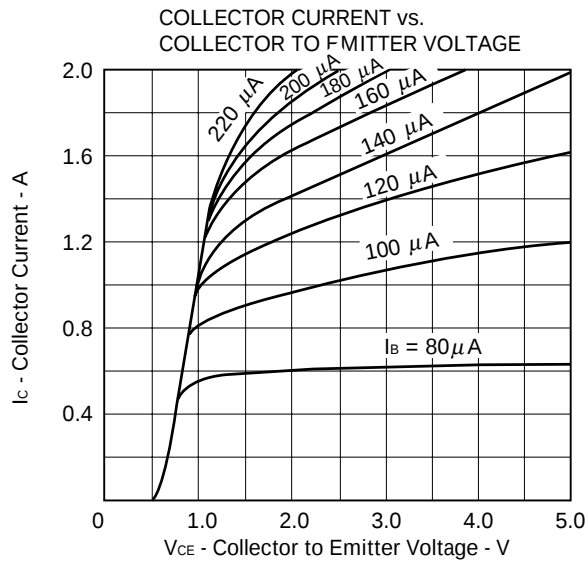
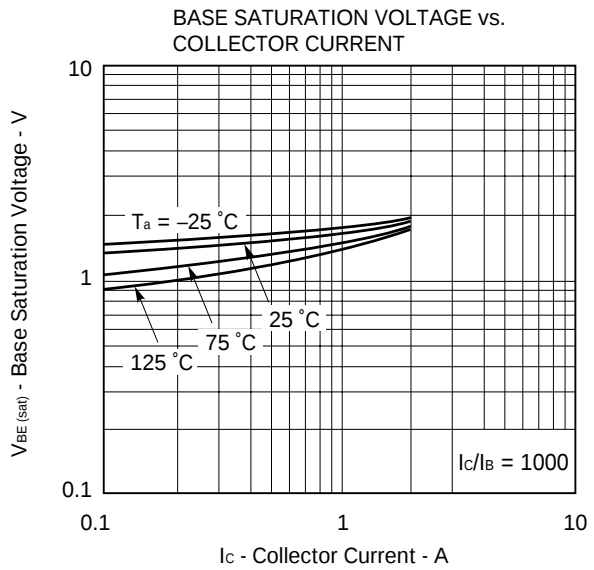
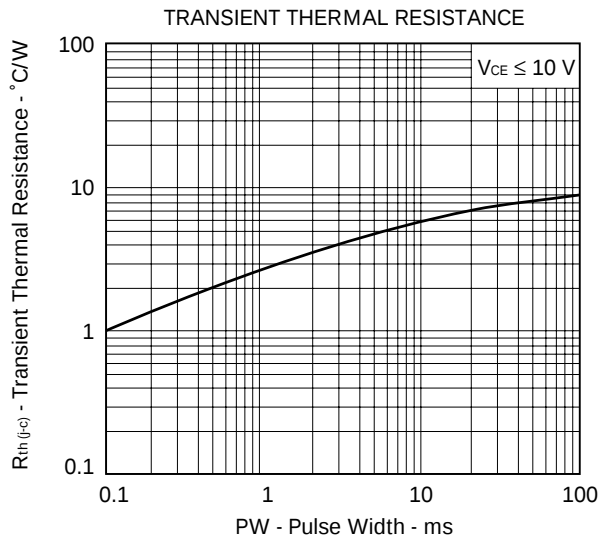
* $PW \leq 350\ \mu\text{s}$, Duty Cycle $\leq 2\%$ / pulsed

SWITCHING TIME TEST CIRCUIT

The application circuits and their parameters are for references only and are not intended for use in actual design-in's.

TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)





REFERENCE

Document Name	Document No.
NEC semiconductor device reliability/quality control system.	TEI-1202
Quality grade on NEC semiconductor devices.	IEI-1209
Semiconductor device mounting technology manual.	IEI-1207
Semiconductor device package manual.	IEI-1213
Guide to quality assurance for semiconductor devices.	MEI-1202
Semiconductor selection guide.	MF-1134

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