

Phase-out/Discontinued

μPA1452

**NPN SILICON POWER TRANSISTOR ARRAY
HIGH SPEED SWITCHING USE
INDUSTRIAL USE**

DESCRIPTION

The μPA1452 is NPN silicon epitaxial 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} . Low $V_{CE(sat)}$.
 $h_{FE} = 100$ to 400 (at $I_c = 2$ A)
 $V_{CE(sat)} = 0.3$ V MAX. (at $I_c = 2$ A)

ORDERING INFORMATION

Part Number	Package	Quality Grade
μPA1452H	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 °C)

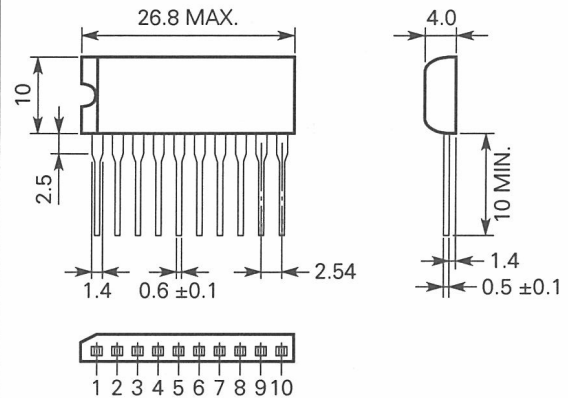
Collector to Base Voltage	V _{CB0}	60	V
Collector to Emitter Voltage	V _{CE0}	60	V
Emitter to Base Voltage	V _{EB0}	7	V
Collector Current (DC)	I _{C(DC)}	5	A/unit
Collector Current (pulse)	I _{C(pulse)*}	10	A/unit
Base Current (DC)	I _{B(DC)}	1.0	A/unit
Total Power Dissipation	P _{T1**}	3.5	W
Total Power Dissipation	P _{T2***}	28	W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

* PW ≤ 300 μs, Duty Cycle ≤ 10 %

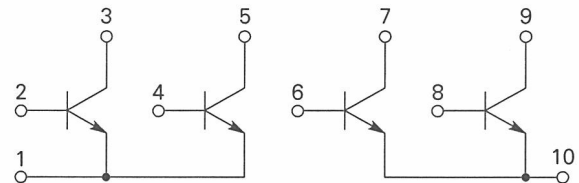
** 4 Circuits, T_a = 25 °C

*** 4 Circuits, T_c = 25 °C

**PACKAGE DIMENSION
(in millimeters)**



CONNECTION DIAGRAM



PIN No.

- 2, 4, 6, 8: Base (B)
- 3, 5, 7, 9: Collector (C)
- 1, 10 : Emitter (E)

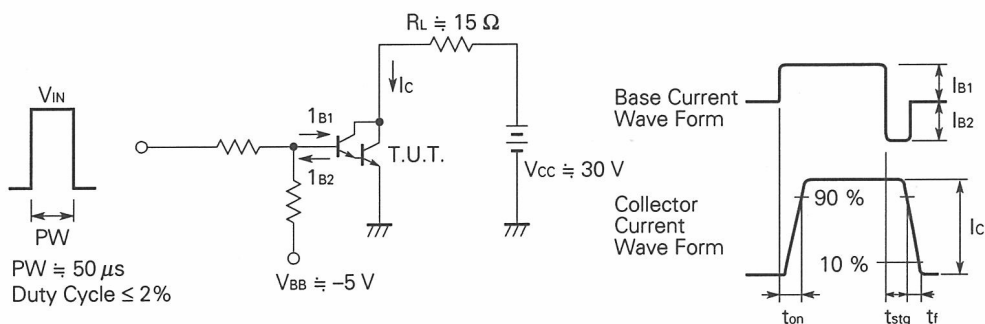
The information in this document is subject to change without notice.

ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

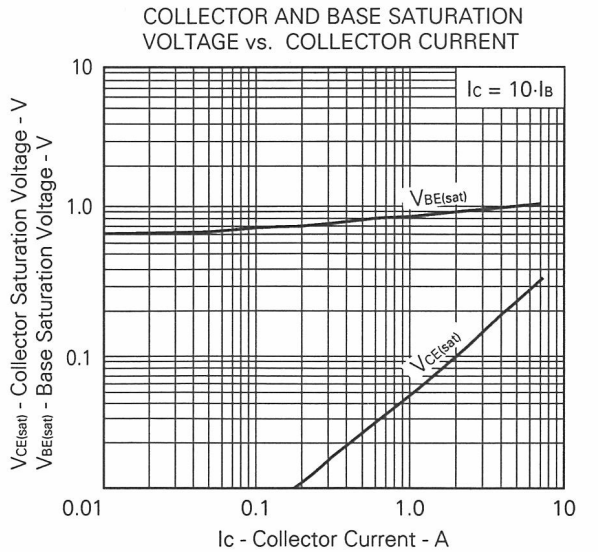
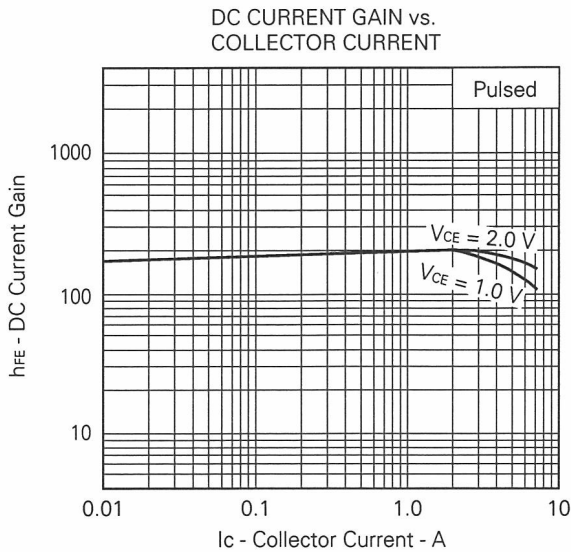
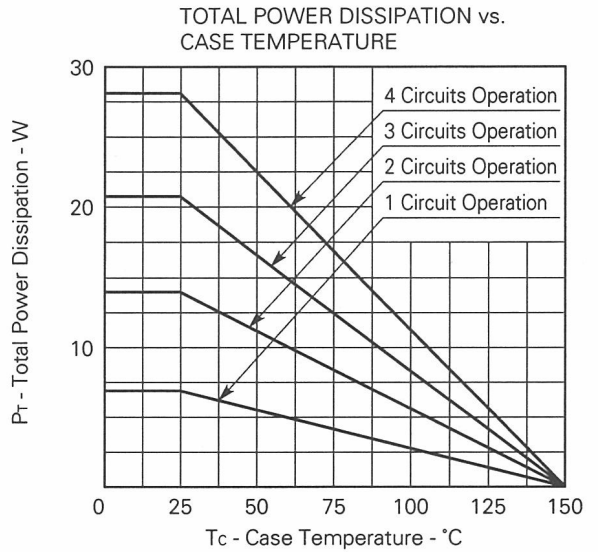
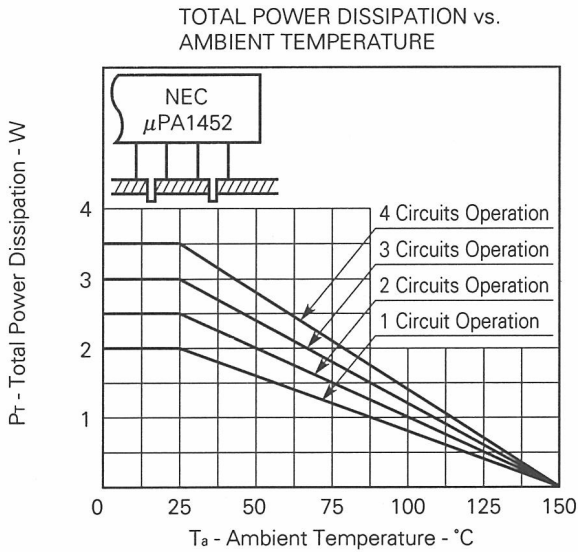
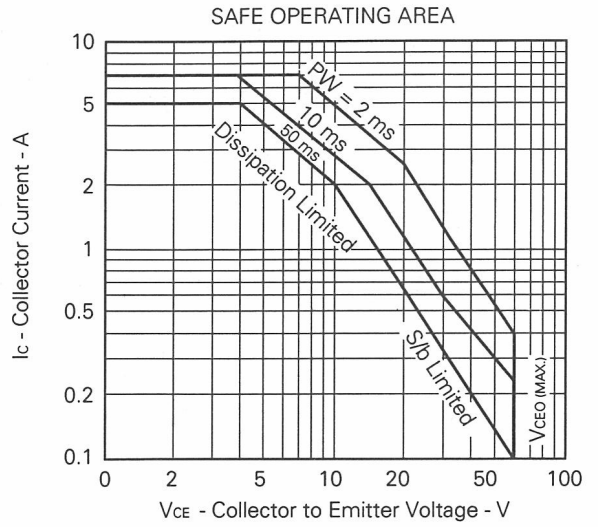
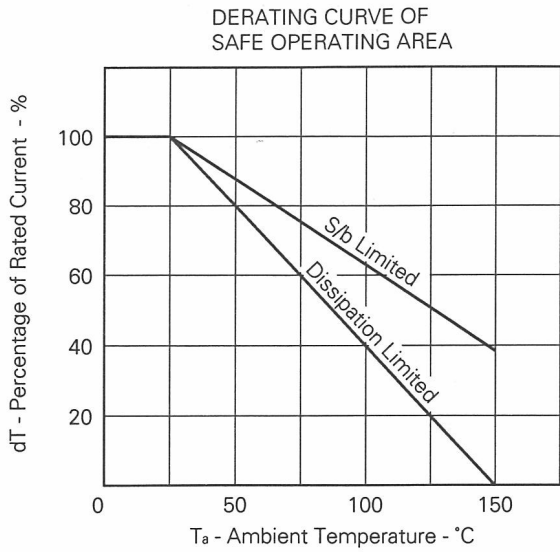
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector Leakage Current	I _{cBO}			10	μA	V _{CB} = 50 V, I _E = 0
Emitter Leakage Current	I _{EBO}			10	μA	V _{EB} = 5 V, I _C = 0
DC Current Gain	h _{FE1} *	60	180		—	V _{CE} = 1 V, I _C = 0.1 A
DC Current Gain	h _{FE2} *	100	200	400	—	V _{CE} = 1 V, I _C = 2 A
DC Current Gain	h _{FE3} *	50	150		—	V _{CE} = 1 V, I _C = 5 A
Collector Saturation Voltage	V _{CE(sat)} *		0.1	0.3	V	I _C = 2 A, I _B = 0.2 A
Base Saturation Voltage	V _{BE(sat)} *		0.9	1.2	V	I _C = 2 A, I _B = 0.2 A
Turn On Time	t _{on}			1	μs	I _C = 2 A I _{B1} = -I _{B2} = 0.2 A V _{CC} ≐ 30 V, R _L ≐ 15 Ω See test circuit
Storage Time	t _{stg}			2.5	μs	
Fall Time	t _f			1	μs	

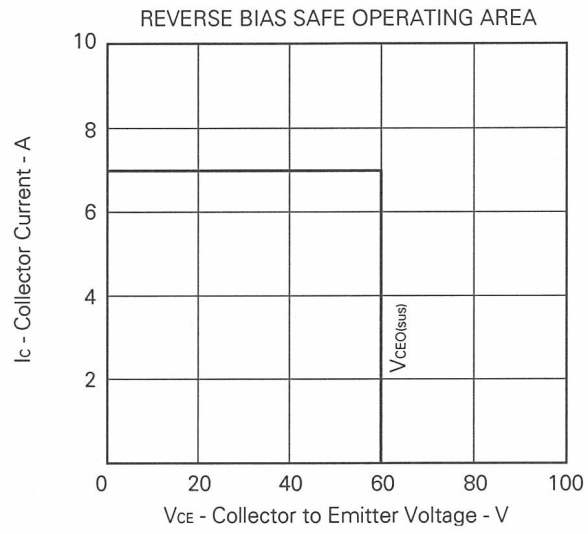
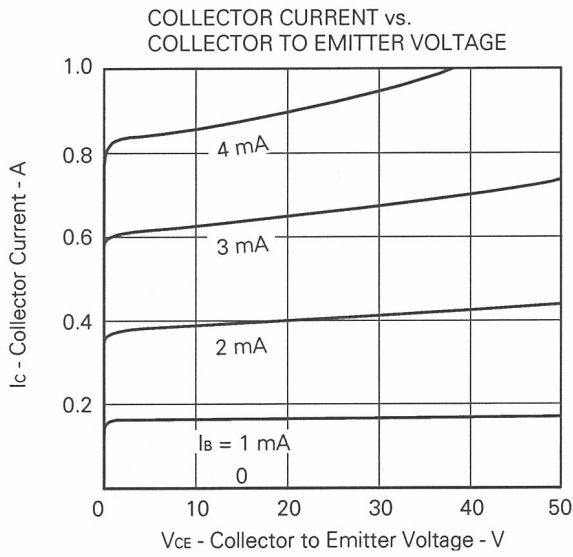
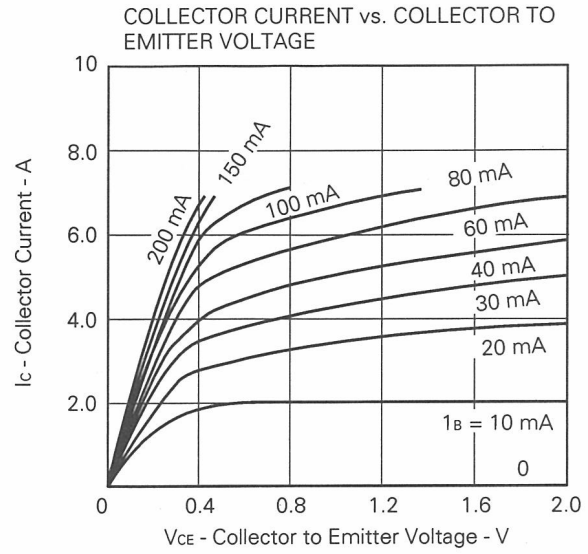
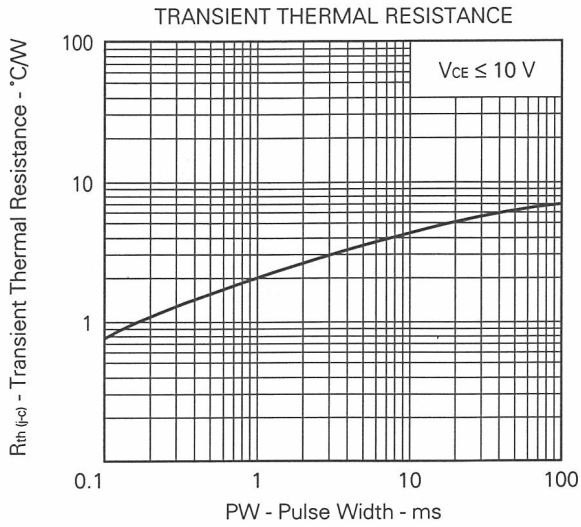
* PW ≤ 350 μs, Duty Cycle ≤ 2 % / pulsed

SWITCHING TIME TEST CIRCUIT



TYPICAL CHARACTERISTICS (T_a = 25 °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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