

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

DESCRIPTION

The μPA1437 is PNP 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.

ORDERING INFORMATION

Part Number	Package	Quality Grade
μPA1437H	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 ($T_a = 25\text{ }^\circ\text{C}$)

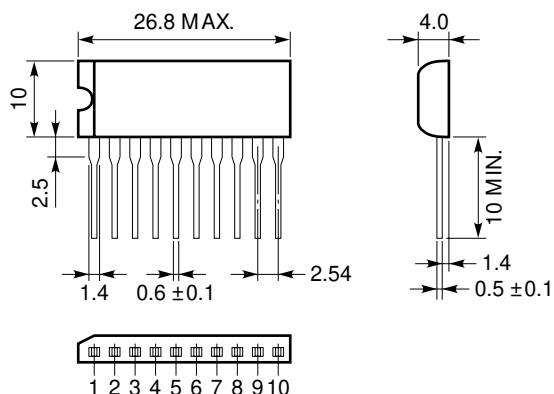
Collector to Base Voltage	V_{CBO}	-100	V
Collector to Emitter Voltage	V_{CEO}	-100	V
Emitter to Base Voltage	V_{EBO}	-7	V
Collector Current (DC)	$I_{C(DC)}$	±3	A/unit
Collector Current (pulse)	$I_{C(pulse)^*}$	±6	A/unit
Base Current (DC)	$I_{B(DC)}$	-0.3	A/unit
Total Power Dissipation	PT_1^{**}	3.5	W
Total Power Dissipation	PT_2^{***}	28	W
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55 to +150	°C

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

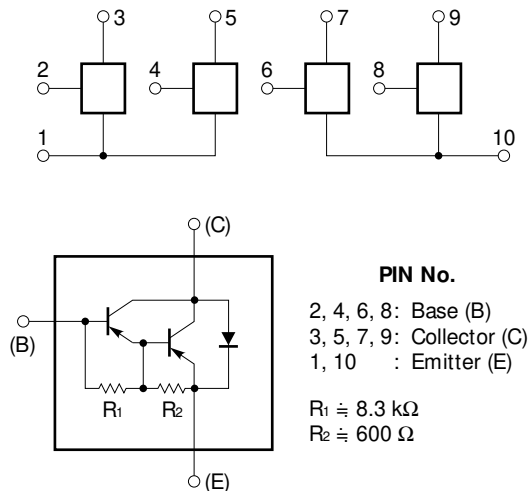
** 4 Circuits, $T_a = 25\text{ }^\circ\text{C}$

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

PACKAGE DIMENSION (in millimeters)



CONNECTION DIAGRAM



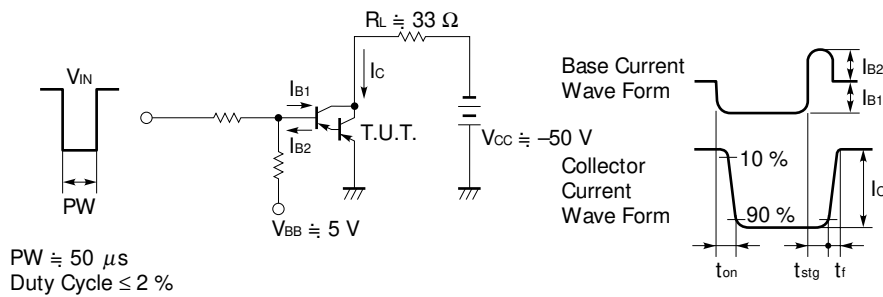
The information in this document is subject to change without notice.

ELECTRICAL CHARACTERISTICS (Ta = 25 °C)

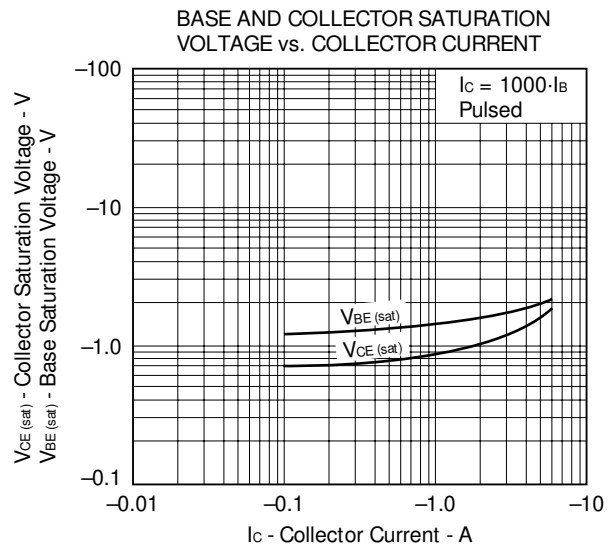
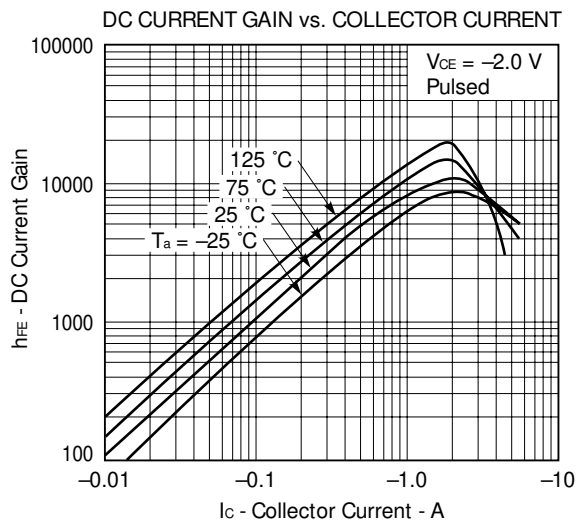
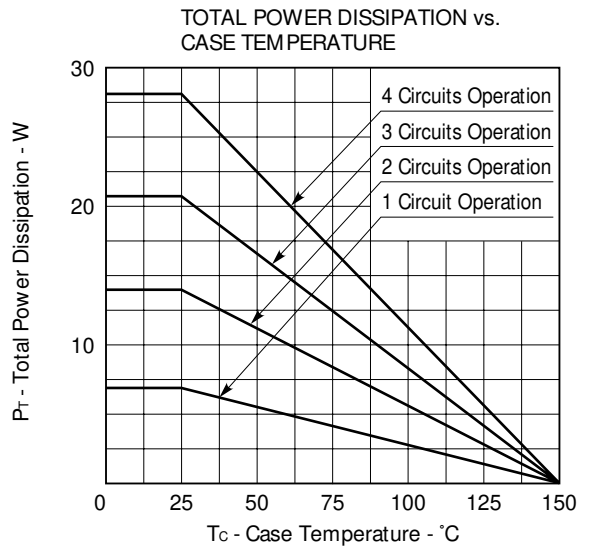
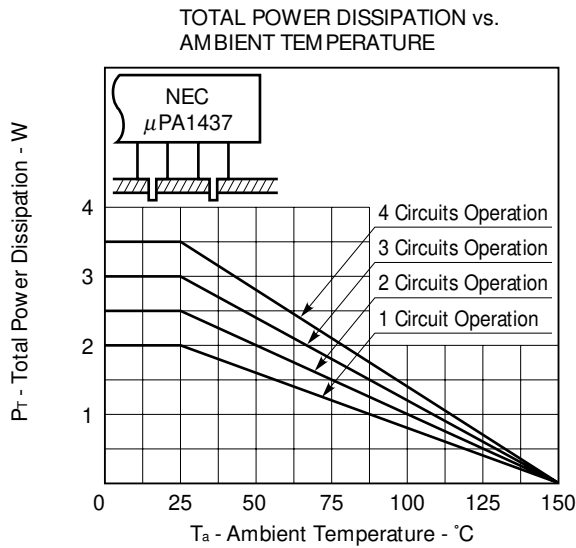
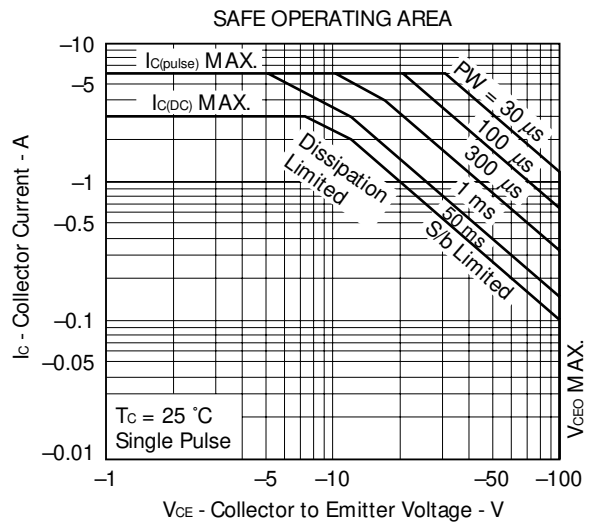
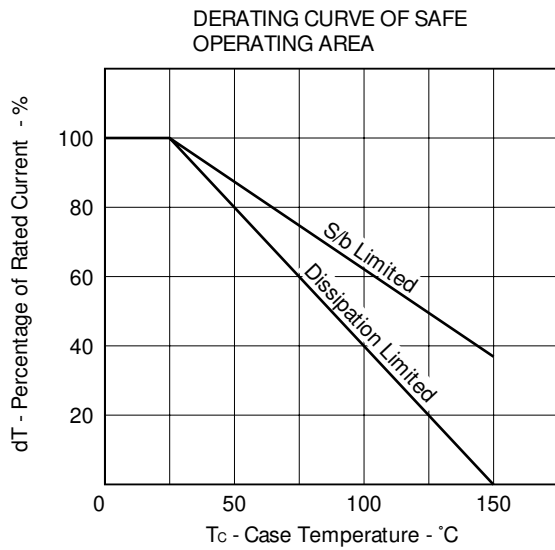
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector to Emitter Sustaining Voltage	$V_{CEO(SUS)}$	-100			V	$I_C = -1.5\text{ A}$, $I_B = -1.5\text{ mA}$, $L = 1\text{ mH}$
Collector Leakage Current	I_{CBO}			-10	μA	$V_{CB} = -100\text{ V}$, $I_E = 0$
Emitter Leakage Current	I_{EBO}			-1	mA	$V_{EB} = -5\text{ V}$, $I_C = 0$
DC Current Gain	h_{FE1} *	1000			—	$V_{CE} = -2\text{ V}$, $I_C = -0.5\text{ A}$
DC Current Gain	h_{FE2} *	2000		20000	—	$V_{CE} = -2\text{ V}$, $I_C = -1.5\text{ A}$
Collector Saturation Voltage	$V_{CE(sat)}$ *		-0.9	-1.2	V	$I_C = -1.5\text{ A}$, $I_B = -1.5\text{ mA}$
Base Saturation Voltage	$V_{BE(sat)}$ *		-1.5	-2	V	$I_C = -1.5\text{ A}$, $I_B = -1.5\text{ mA}$
Turn On Time	t_{on}		1		μs	$I_C = -1.5\text{ A}$
Storage Time	t_{stg}		3		μs	$I_{B1} = -I_{B2} = -1.5\text{ mA}$ $V_{CC} \cong 50\text{ V}$, $R_L \cong 33\ \Omega$
Fall Time	t_f		1		μs	See test circuit

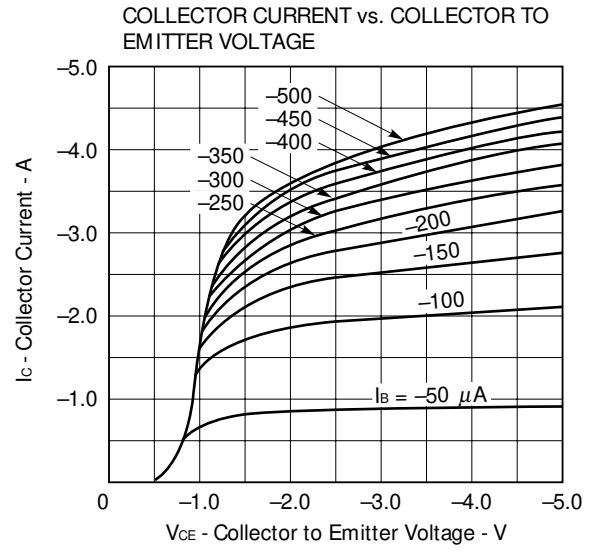
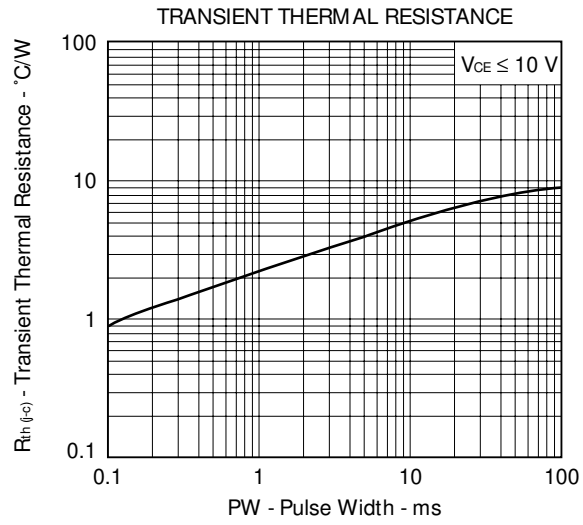
* $PW \leq 350\ \mu s$, Duty Cycle $\leq 2\%$ / pulsed

SWITCHING TIME TEST CIRCUIT



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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