



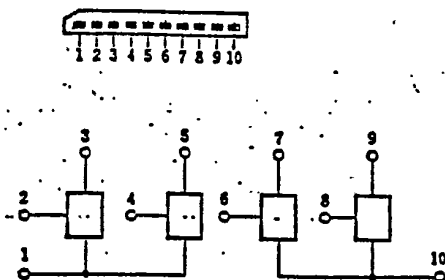
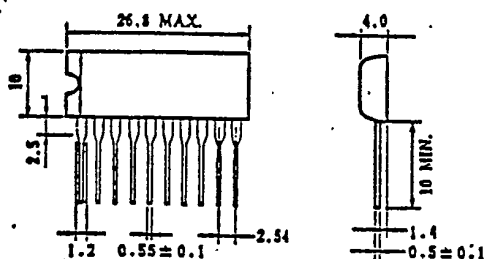
POWER TRANSISTOR ARRAY

 μ PA1438H

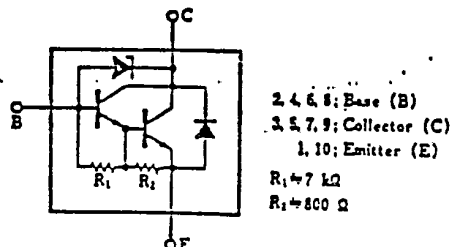
NPN SILICON EPITAXIAL POWER TRANSISTOR ARRAY
LOW SPEED SWITCHING (DARLINGTON)

DESCRIPTION

The μ PA1438H is an array of four darlington power transistors. It is especially designed for applications demand for high peak current capability. It is suitable for driving actuators such as solenoids, motors, relays and lamps.

PACKAGE DIMENSIONS(Unit:mm)
AND INTERNAL CONNECTIONS


EQUIVALENT CIRCUIT(1 Unit)



FEATURES

- High hFE(Darlington)
- High peak current capability
- Easy to mount on plastic substrates
- Able to use with high-density mounting
- Built-in Zener Diode

between Collector and Base

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

Collector to Base Voltage	V_{CB0}	$60 \pm 10\text{V}$
Collector to Emitter Voltage	V_{CE0}	$60 \pm 10\text{V}$
Emitter to Base Voltage	V_{EB0}	7.0V
Collector Current(DC)	$I_{C(DC)}$	$\pm 3.0\text{A/unit}$
Collector Current(pulse)	$I_{C(pulse)}$	$\pm 6.0\text{A/unit}$
Base Current(DC)	$I_{B(DC)}$	0.3A/unit
Total Power Dissipation	PT^{**}	3.5W
Total Power Dissipation	PT^{***}	28W
Junction Temperature	T_J	150°C
Storage Temperature	T_{stg}	$-55 \text{ to } +150^\circ\text{C}$

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

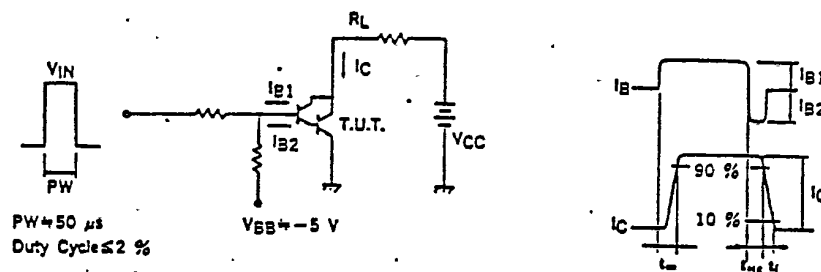
** When all units are used, $T_a=25^\circ\text{C}$

*** When all units are used, $T_c=25^\circ\text{C}$

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

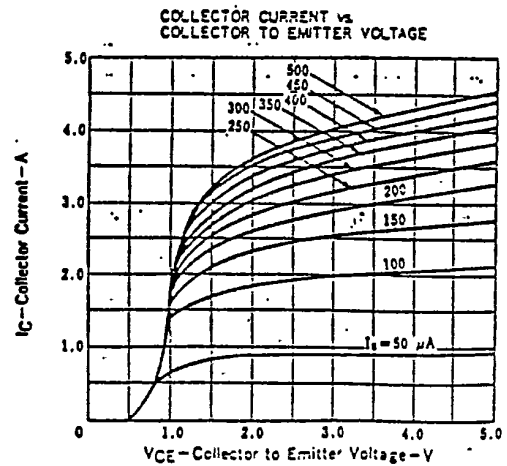
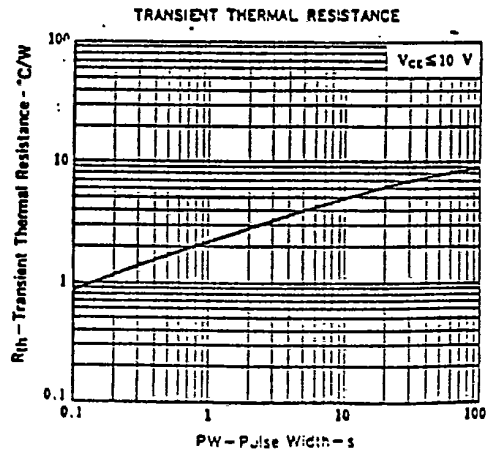
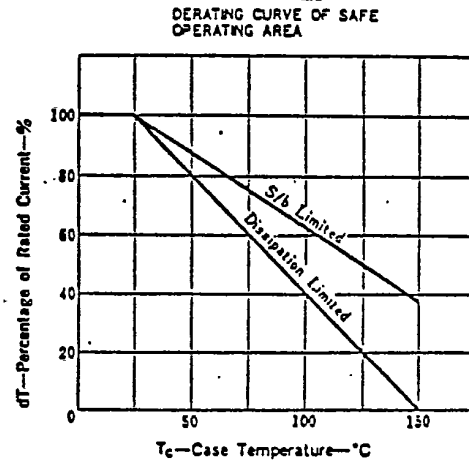
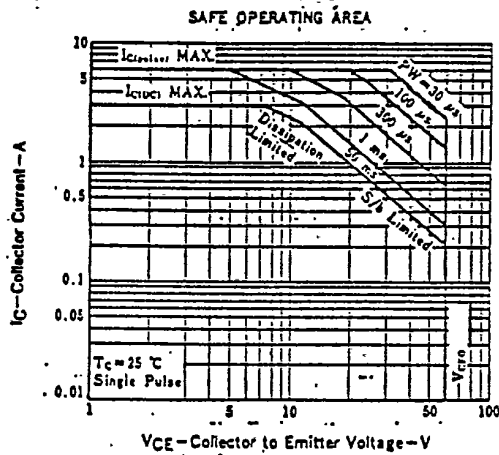
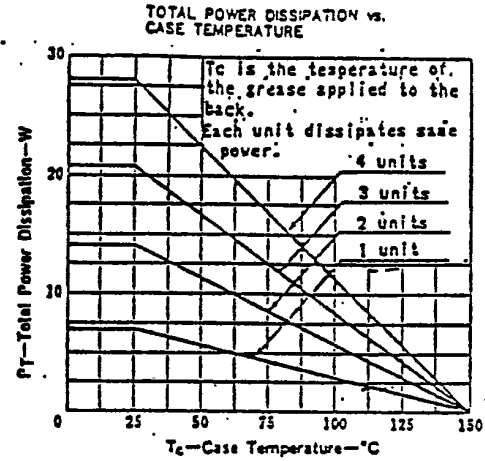
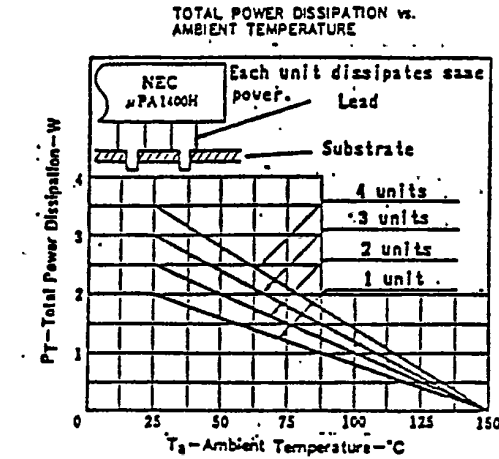
ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Collector to Emitter Sustaining Voltage	$V_{CE0}(\text{SUS})$	50	60	70	V	$I_C=1.5\text{A}, I_B=1.5\text{mA}$ $L=1\text{mH}$
Collector Cutoff Current	I_{CB0}			10	μA	$V_{CB}=40\text{V}, I_E=0$
Emitter Cutoff Current	I_{EB0}			1	mA	$V_{EB}=5.0\text{V}, I_C=0$
DC Current Gain	$h_{FE1}\#$	1000			-	$V_{CE}=2.0\text{V}, I_C=0.5\text{A}$
DC Current Gain	$h_{FE2}\#$	2000		20000	-	$V_{CE}=2.0\text{V}, I_C=1.5\text{A}$
Collector to Emitter Saturation Voltage	$V_{CE}(\text{sat})\#$		0.9	1.2	V	$I_C=1.5\text{A}, I_B=1.5\text{mA}$
Base to Emitter Saturation Voltage	$V_{BE}(\text{sat})\#$		1.5	2.0	V	$I_C=1.5\text{A}, I_B=1.5\text{mA}$
Turn-On Time	t_{on}		1.0		μs	$I_C=1.5\text{A}$ $I_{B1}=-I_{B2}=1.5\text{mA}$
Storage Time	t_{stg}		3.0		μs	$R_L=27\ \Omega, V_{CC}=40\text{V}$
Fall Time	t_f		1.0		μs	See Test Circuit.

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

SWITCHING TIME (t_{on}, t_{stg}, t_f) TEST CIRCUIT


NEC ELECTRON DEVICE

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



NEC ELECTRON DEVICE

