UTC 2SD879 NPN EPITAXIAL SILICON TRANSISTOR

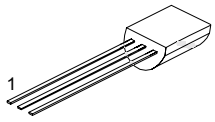
1.5V, 3V STROBE APPLICATIONS

DESCRIPTION

The UTC 2SD879 is a NPN epitaxial silicon transistor, designed for 1.5V and 3V strobe applications.

FEATURES

*In applications where two NiCd batteries are used to provide 2.4V, two 2SD879s are used.
*The charge time is approximately 1 second faster than that of germanium transistors.
*Less power dissipation because of lwo Collector-to-Emitter Voltage $V_{CE(sat)}$, permitting more flashes of light to be emitted.
*Large current capacity and highly resistant to break-down.
*Excellent linearity of hFE in the region from low current to high current.



TO-92

1:EMITTER 2:COLLECTOR 3:BASE

ABSOLUTE MAXIMUM RATINGS (Ta=25°C ,unless otherwise specified)

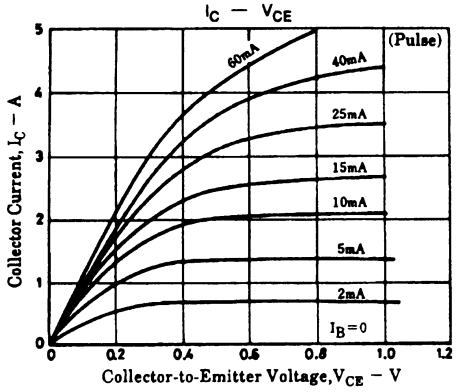
PARAMETER	SYMBOL	VALUE	UNIT
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEX}	20	V
Collector-Emitter Voltage	V_{CEO}	10	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Dissipation	P_D	1	W
Collector Current(DC)	Ic	3	A
Collector Current(PULSE)	Icp	5	A
Junction Temperature	T_j	150	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

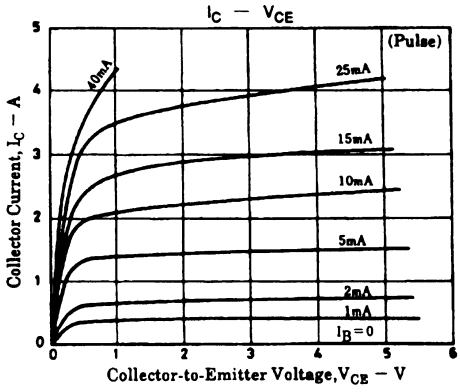
Note: PULSE CONDITION -> 100 ms single pulse

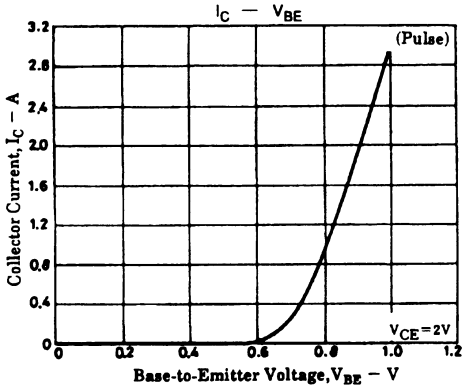
ELECTRICAL CHARACTERISTICS (Ta=25°C, unless otherwise specified)

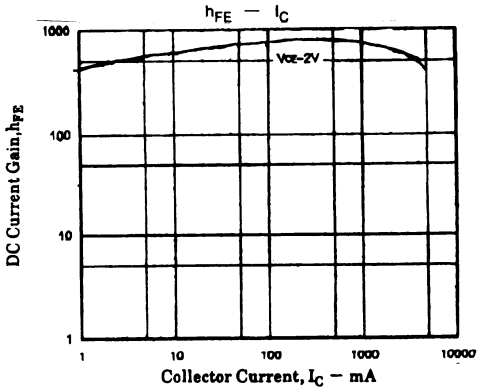
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Voltage	V_{CBO}	I_C=10uA, I_E=0	30			V
Collector-Emitter Voltage	V_{CEX}	I_C=1mA, V_{BE}=3V	20			V
Collector-Emitter Voltage	V_{CEO}	I_C=1mA, R_{BE}=∞	10			V
Emitter-Base Voltage	V_{EBO}	I_E=10uA, I_C=0	6			V
Base-Emitter Voltage	V_{BE}	V_{CE}=-1V,I_C=-2A		0.83	1.5	V
Collector Cut-Off Current	I_{CBO}	V_{CB}=20V,I_E=0			1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=4V,Ic=0			1	μA
DC Current Gain	h_{FE}	V_{CE}=2V, Ic=3A (pulse)	140	210	400	
Collector-Emitter Saturation Voltage	V_{CE}(sat)	Ic=3A,I_B=60mA (pulse)		0.3	0.4	V
Current Gain Bandwidth Product	f_T	V_{CE}=10V, Ic=50mA		200		MHz
Output Capacitance	Cob	V_{CB}=10V,f=1MHz		30		pF

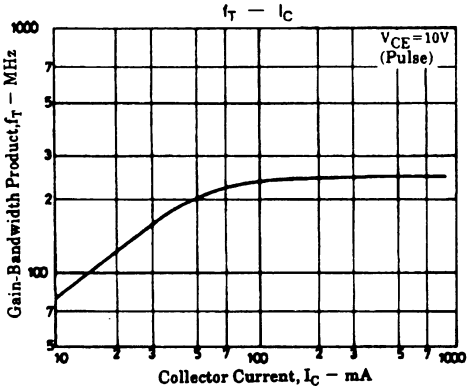
Pulse: 1mS

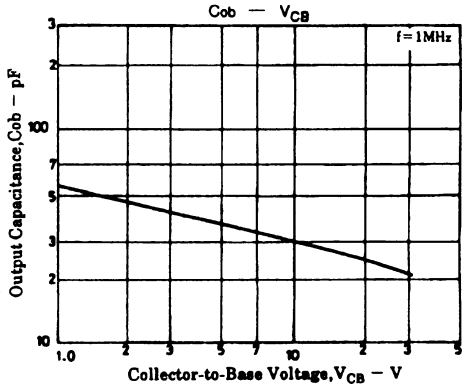

I_C — V_{CE}
(Pulse)
60mA
40mA
25mA
15mA
10mA
5mA
2mA
I_B=0
Collector Current, I_C — A
Collector-to-Emitter Voltage, V_{CE} — V

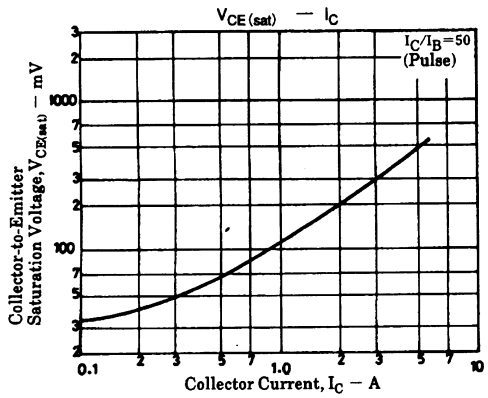

I_C — V_{CE}
(Pulse)
40mA
25mA
15mA
10mA
5mA
2mA
1mA
I_B=0
Collector Current, I_C — A
Collector-to-Emitter Voltage, V_{CE} — V

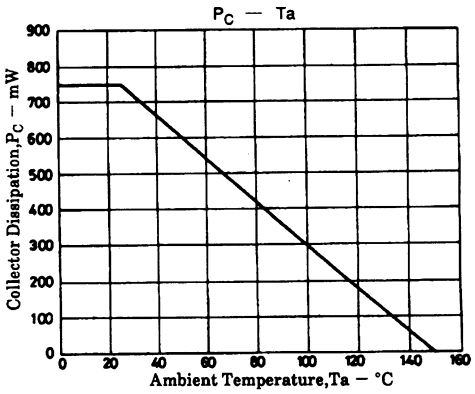

I_C — V_{BE}
(Pulse)
V_{CE}=2V
Collector Current, I_C — A
Base-to-Emitter Voltage, V_{BE} — V

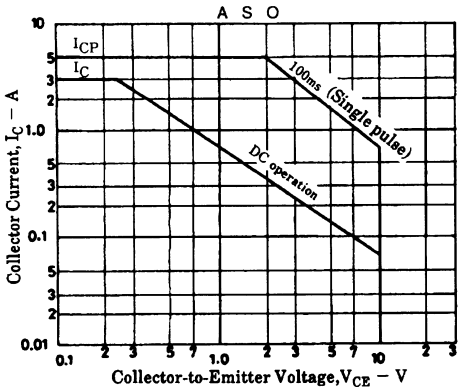

h_{FE} — I_C
V_{CE}=2V
DC Current Gain, h_{FE}
Collector Current, I_C — mA


f_T — I_C
V_{CE}=10V
(Pulse)
Gain-Bandwidth Product, f_T — MHz
Collector Current, I_C — mA


Cob — V_{CB}
f=1MHz
Output Capacitance, Cob — pF
Collector-to-Base Voltage, V_{CB} — V


$V_{CE(sat)}$ — I_C
I_C/I_B=50
(Pulse)
Collector-to-Emitter Saturation Voltage, $V_{CE(sat)}$ — mV
Collector Current, I_C — A


P_C — Ta
Collector Dissipation, P_C — mW
Ambient Temperature, Ta — °C


A S O
I_{CP}
I_C
100ms (Single pulse)
DC operation
Collector Current, I_C — A
Collector-to-Emitter Voltage, V_{CE} — V