

UTCBU941

NPN EPITAXIAL SILICON TRANSISTOR

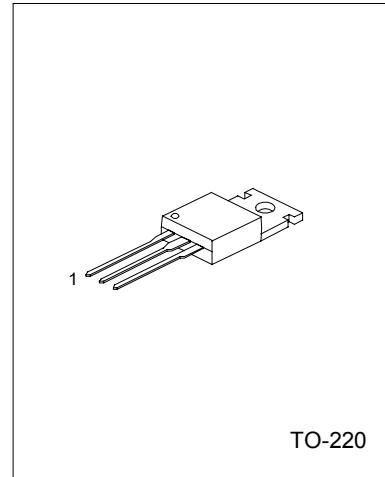
NPN POWER DARLINGTON
HIGH VOLTAGE IGNITION COIL
DRIVER

FEATURES

- *NPN darlington
- *Integrated antiparallel collector-emitter diode

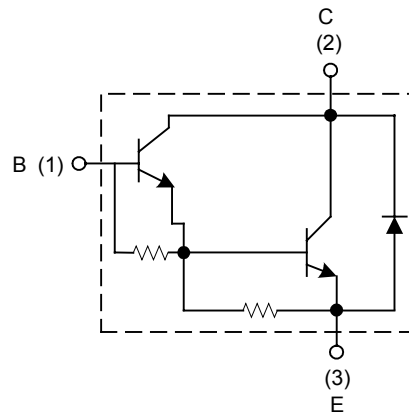
APPLICATIONS

- * High ruggedness electric ignitions



1: BASE 2:COLLECTOR 3: EMITTER

INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage	V_{CES}	500	V
Collector-Emitter Voltage	V_{CEO}	400	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	15	A
Collector Peak Current	I_{CM}	30	A
Base Current	I_B	1	A
Base Peak Current	I_{BM}	5	W
Total Dissipation ($T_c=25^\circ\text{C}$)	P_{tot}	150	W
Storage Temperature	T_{stg}	-65 ~ 175	$^\circ\text{C}$
Operating Junction Temperature	T_j	175	$^\circ\text{C}$

UTC UNISONIC TECHNOLOGIES CO. LTD

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QW-R203-025,A

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NPN EPITAXIAL SILICON TRANSISTOR

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Sustaining Voltage	$V_{CEO(sus)^*}$	$I_c=100mA, V_{clamp}=400V, L=10mH$ (see fig. 1)	400			V
Collector Cut-off Current	I_{CES}	$V_{CE}=500V, V_{BE}=0$ $V_{CE}=500V, V_{BE}=0, T_j=125^\circ C$			100 0.5	μA mA
Collector Cut-off Current	I_{CEO}	$V_{CE}=450V, I_B=0$ $V_{CE}=450V, I_B=0, T_j=125^\circ C$			100 0.5	μA mA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=5V, I_c=0$			20	mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)^*}$	$I_c=8A, I_B=100mA$ $I_c=10A, I_B=250mA$ $I_c=12A, I_B=300mA$			1.6 1.8 2	V
Base-Emitter Saturation Voltage	$V_{BE(sat)^*}$	$I_c=8A, I_B=100mA$ $I_c=10A, I_B=250mA$ $I_c=12A, I_B=300mA$			2.2 2.5 2.7	V
DC Current Gain	H_{FE}^*	$V_{CE}=10V, I_c=5A,$	300			
Diode Forward Voltage	V_F	$I_F=10A$			2.5	V
Functional Test		$V_{CC}=24V, V_{clamp}=400V, L=7mH$ (see Functional Test Circuit)	10			A
Fall Time	t_f	$V_{CC}=12V, V_{clamp}=300V, V_{BE}=0,$		15		μs
Storage Time	t_s	$R_{BE}=47\Omega, L=7mH, I_c=7A, I_B=70mA$ (see fig.2)		0.5		

*Pulsed: Pulse duration=300 μs , duty cycle 1.5%

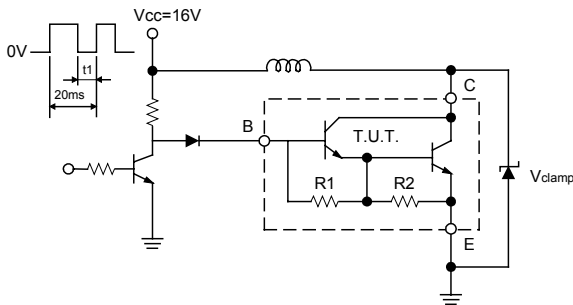


Fig. 1 Sustaining Voltage Test Circuit

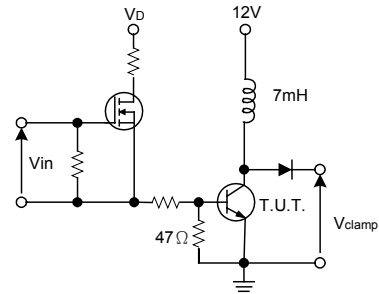
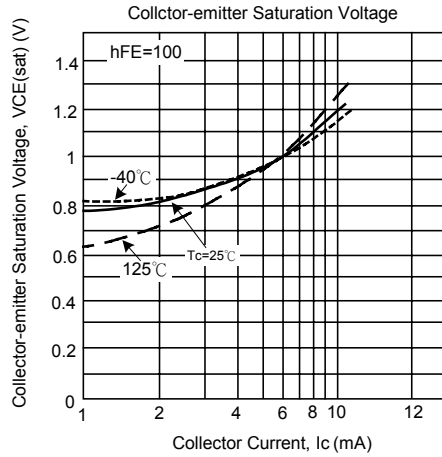
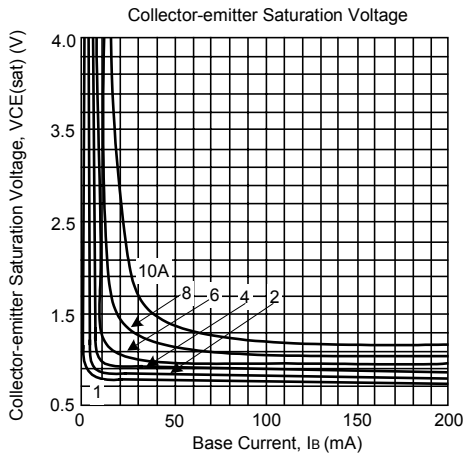
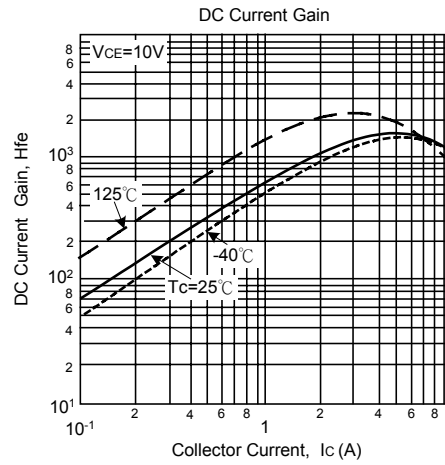
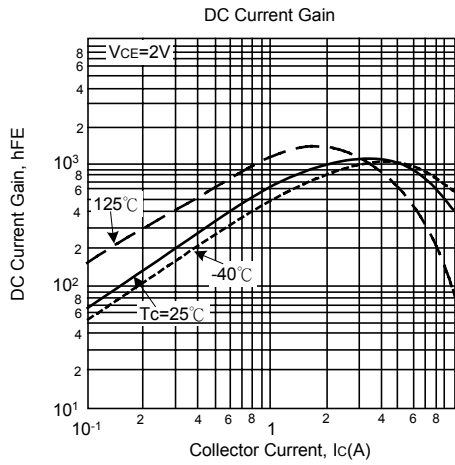
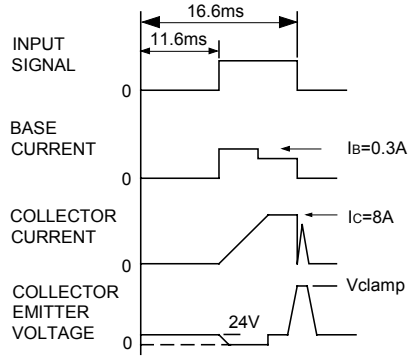
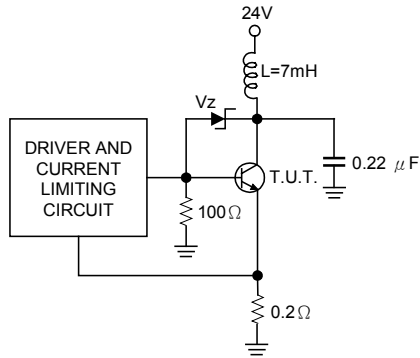
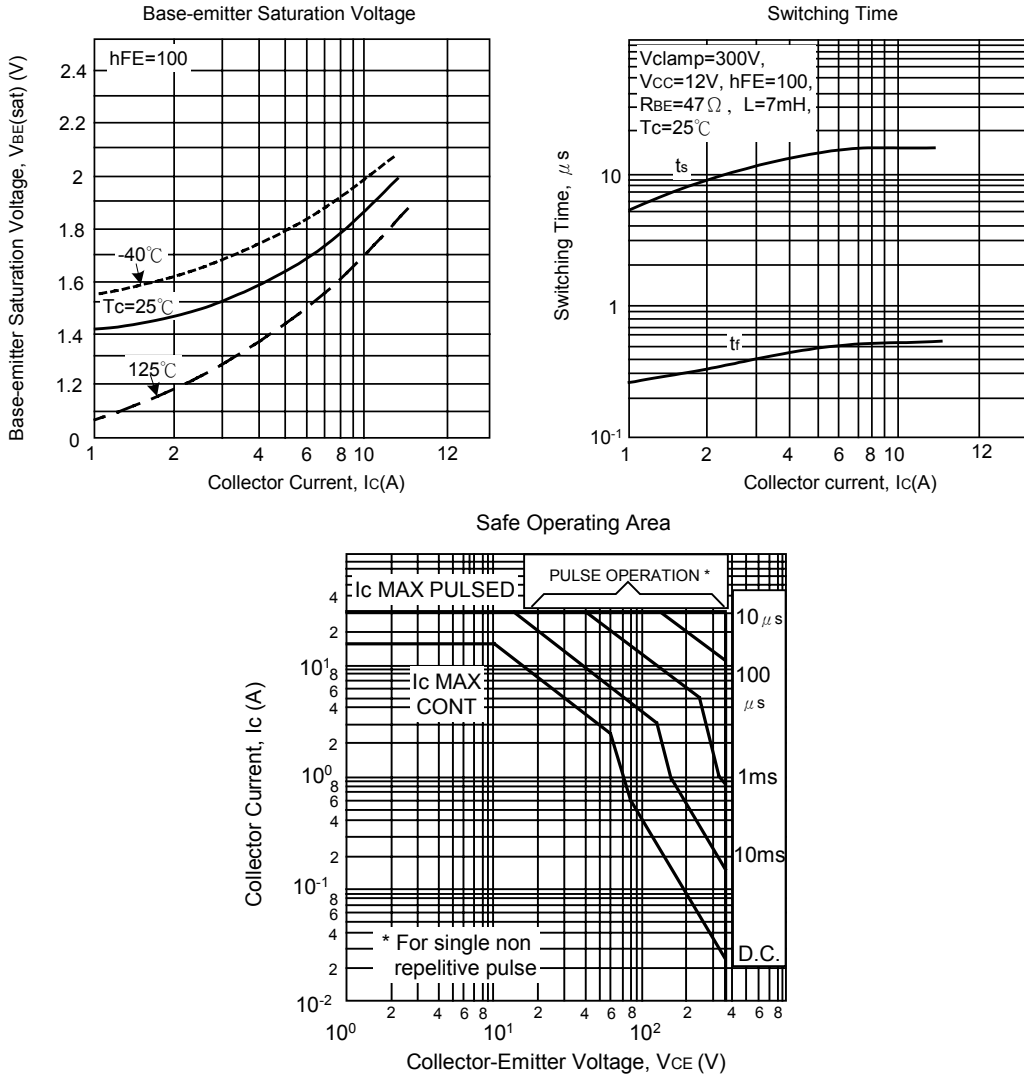


Fig. 2 Switching Time Test Circuit

FUNCTION TEST CIRCUIT





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