



USS4450

NPN SILICON TRANSISTOR

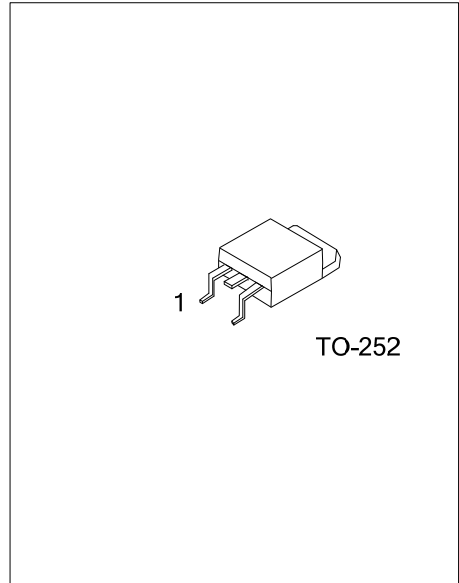
50V, 5A NPN LOW $V_{CE(SAT)}$ TRANSISTOR

DESCRIPTION

The UTC **USS4450** is a NPN transistor with low V_{CEsat} . It has high collector current I_C , I_{CM} performance. This device can be used in power management applications, such as DC/DC converters, supply line switching, battery charger and linear voltage regulation (LDO) and peripheral drivers, such as driver in low supply voltage applications and inductive load driver.

FEATURES

- * Less heat dissipation due to high efficiency
- * Low collector-emitter saturation voltage
- * High collector current capability
- * High collector current gain under high collector current condition



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USS4450L-TN3-R	USS4450G-TN3-R	TO-252	B	C	E	Tape Reel

USS4450L-TN3-R (1) Packing Type (2) Package Type (3) Lead Free	(1) R: Tape Reel (2) TN3: TO-252 (3) L: Lead Free G: Halogen Free
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■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V _{CBO}	60	V
Collector-Emitter Voltage	V _{CEO}	50	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current	DC	I _C	3
	Peak	I _{CM}	5
Peak Base Current	I _{BM}	1	A
Power Dissipation (T _C =25°C) (Note 2)	P _D	1.4	W
Junction Temperature	T _J	150	°C
Operating Temperature	T _{OPR}	+150	°C
Storage Temperature	T _{STG}	-65 ~ +150	°C

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 6 cm²

■ THERMAL CHARACTERISTICS

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient (Note)	θ _{JA}	62.5	°C/W

Notes Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 6 cm².

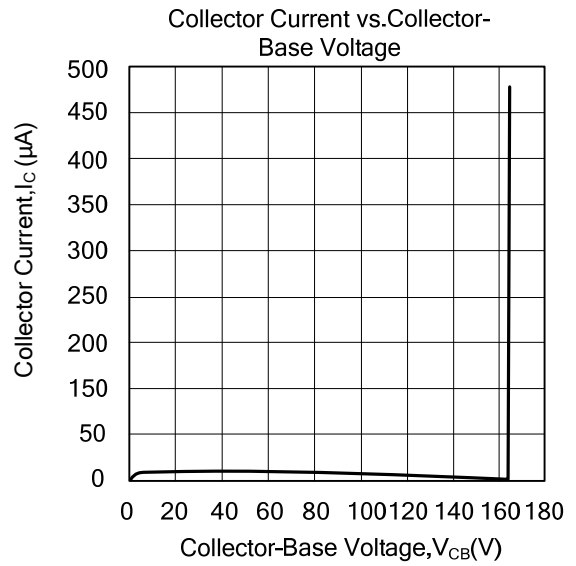
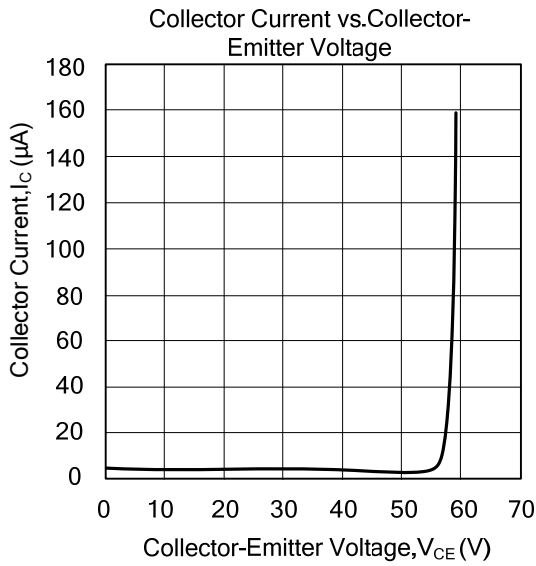
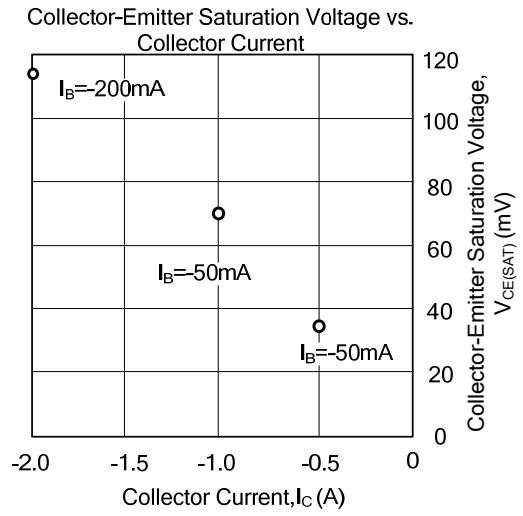
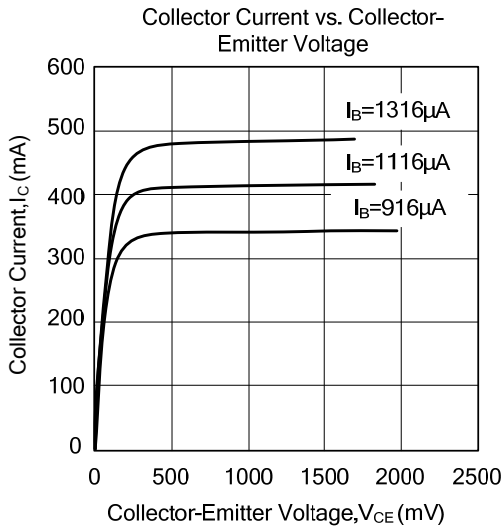
For other mounting conditions see "Thermal considerations for TO-252 in the General Part of associated Handbook".

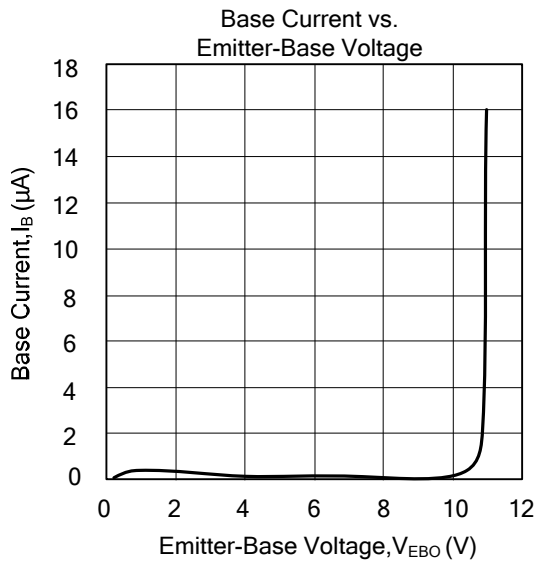
■ ELECTRICAL CHARACTERISTICS T_A = 25 °C unless otherwise specified.

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Cut-Off Current	I _{CBO}	V _{CB} = 50 V, I _E = 0			100	nA
		V _{CB} = 50 V, I _E = 0, T _J = 150 °C			50	μA
Emitter-Base Cut-Off Current	I _{EBO}	V _{EB} = 5V, I _C = 0			100	nA
DC Current Gain	h _{FE}	V _{CE} = 2V, I _C = 500 mA	200			
		V _{CE} = 2V, I _C = 1 A, (Note 1)	200			
		V _{CE} = 2V, I _C = 2 A, (Note 1)	100			
Collector-Emitter Saturation voltage	V _{CEsat}	I _C = 500 mA, I _B = 50mA			90	mV
		I _C = 1 A, I _B = 50mA			170	mV
		I _C = 2 A, I _B = 200 mA, (Note 1)			290	mV
Equivalent On-Resistance	R _{CEsat}	I _C = 2 A, I _B = 200 mA, (Note 1)		110	145	mΩ
Base-Emitter Saturation voltage	V _{BEsat}	I _C = 2 A, I _B = 200 mA, (Note 1)			1.2	V
Base-Emitter Turn-On Voltage	V _{BEon}	V _{CE} = 2V, I _C = 1 A, (Note 1)			1.1	V
Transition Frequency	f _T	I _C = 100 mA, V _{CE} = 5 V, f = 100 MHz	100			MHz
Collector Capacitance	C _c	V _{CB} = 10 V, I _E = I _C = 0, f = 1 MHz			30	pF

Note 1. Pulse test: t_p ≤ 300 μs, δ ≤ 0.02.

■ TYPICAL CHARACTERISTICS





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