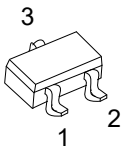
USS4240T

PNP EPITAXIAL SILICON TRANSISTOR

2.0A, 40V NPN LOW $V_{CE(SAT)}$ TRANSISTOR



SOT-23
(JEDEC TO-236)

■ DESCRIPTION

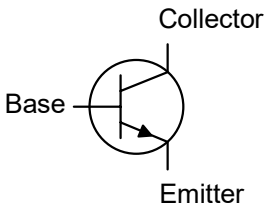
The UTC **USS4240T** is NPN low $V_{CE(SAT)}$ transistor in a medium power and flat lead SOT-23 Surface-Mounted Device (SMD) plastic package.

PNP complement: USS5240T.

■ FEATURES

* Very low collector-emitter saturation voltage $V_{CE(SAT)}$
* High collector current capability I_C and I_{CM}
* High collector current gain (h_{FE}) at high IC
* High energy efficiency due to less heat generation
* Green & Pb Free

■ EQUIVALENT CIRCUIT



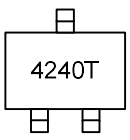
■ ORDERING INFORMATION

Ordering Number	Package	Pin Assignment			Packing
		1	2	3	
USS4240TG-AE3-R	SOT-23	B	E	C	Tape Reel

Note: Pin Assignment: B: Base E: Emitter C: Collector

USS4240TG-AE3-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AE3: SOT-23 (3) G: Halogen Free and Lead Free

■ MARKING



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■ ABSOLUTE MAXIMUM RATING (T_A = 25°C, unless otherwise specified.)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	40	V
Collector-Emitter Voltage		V_{CEO}	40	V
Emitter-Base Voltage		V_{EBO}	7	V
Collector Current	DC	I_C	2	A
	Peak	I_{CM}	3	A
Collector Power Dissipation ($T_A \leq 25°C$)		P_C	0.35	W
Junction Temperature		T_J	+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 FR4 printed-circuit board, single-sided copper; tin-plated, mounting pad for collector 1 cm^2.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	357	°C/W
Junction to Case	θ_{JC}	260	°C/W

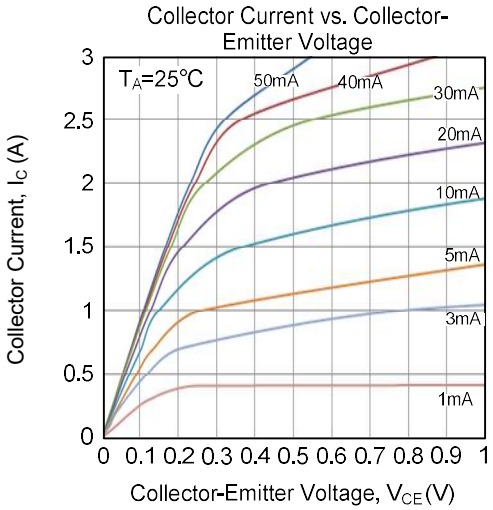
Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

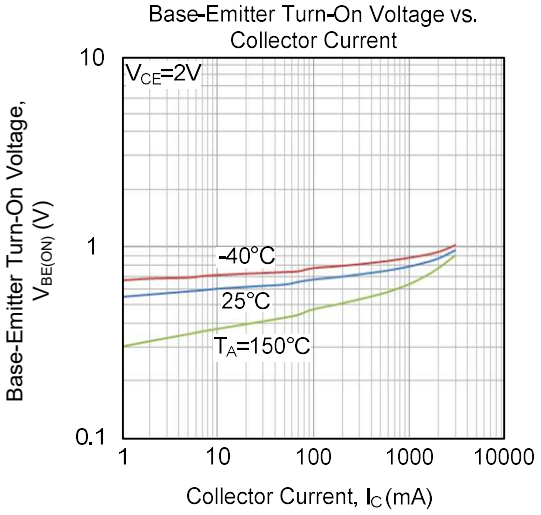
■ ELECTRICAL CHARACTERISTICS (T_A = 25°C, unless otherwise specified.)

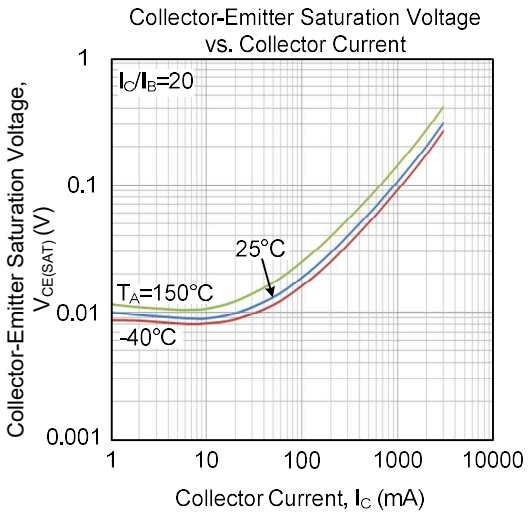
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=100μA, I_E=0	40			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=1mA, I_B=0	40			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=100μA, I_C=0	7			V
Collector-Base Cut-Off Current	I_{CBO}	V_{CB}=40V, I_E=0			100	nA
		V_{CB}=40V, I_E=0, T_J=150°C			50	μA
Collector-Emitter Cut-Off Current	I_{CES}	V_{CE}=40V, V_{BE}=0			100	nA
Emitter-Base Cut-Off Current	I_{EBO}	V_{EB}=5V, I_C=0			100	nA
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	I_C=100mA, I_B=1mA			80	mV
		I_C=500mA, I_B=50mA			100	mV
		I_C=1A, I_B=50mA			160	mV
		I_C=1A, I_B=100mA			140	mV
		I_C=2A, I_B=100mA			320	mV
		I_C=2A, I_B=200mA			300	mV
Base-Emitter Saturation Voltage (Note)	$V_{BE(SAT)}$	I_C=500mA, I_B=50mA			1	V
		I_C=1A, I_B=50mA			1.1	V
		I_C=2A, I_B=100mA			1.15	V
		I_C=2A, I_B=200mA			1.2	V
Base-Emitter Turn-On Voltage (Note)	$V_{BE(ON)}$	I_C=0.5A, V_{CE}=2V			1	V
Dc Current Gain (Note)	h_{FE}	V_{CE}=2V, I_C=100mA	300			
		V_{CE}=2V, I_C=500mA	250			
		V_{CE}=2V, I_C=1A	180			
		V_{CE}=2V, I_C=2A	100			

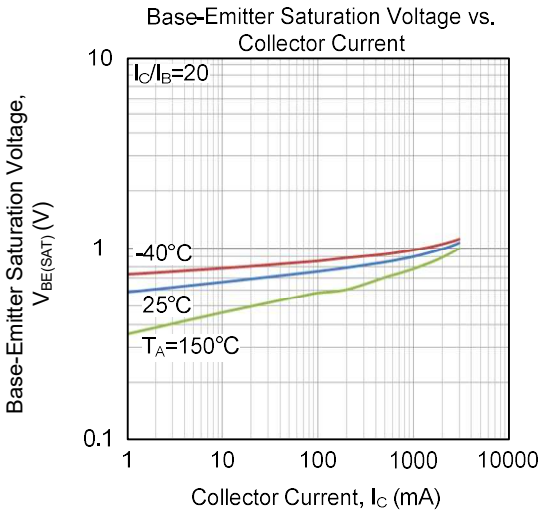
Note: Measured under pulsed conditions. Pulse width ≤ 300μs. Duty cycle ≤ 2%,

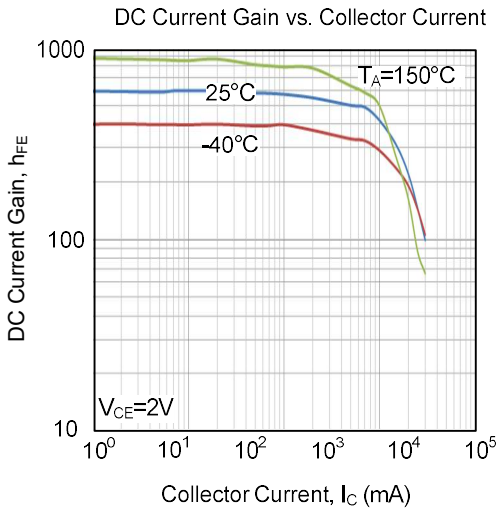
■ TYPICAL CHARACTERISTICS

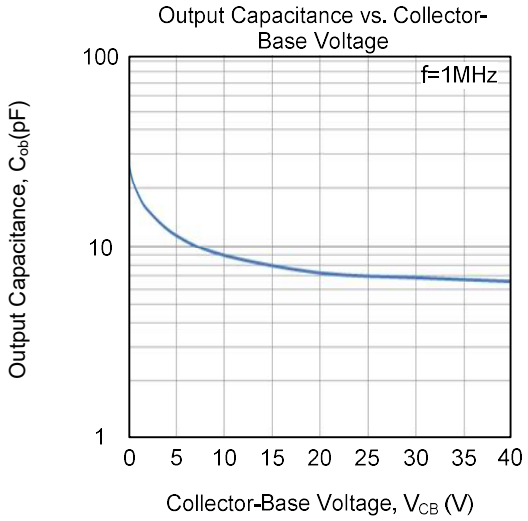




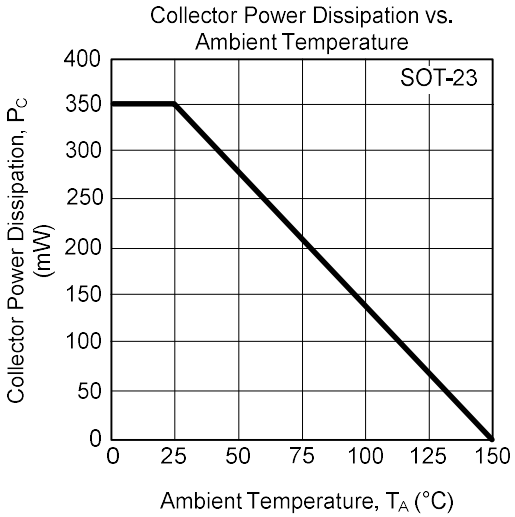








■ TYPICAL CHARACTERISTICS



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