



USS4350

NPN SILICON TRANSISTOR

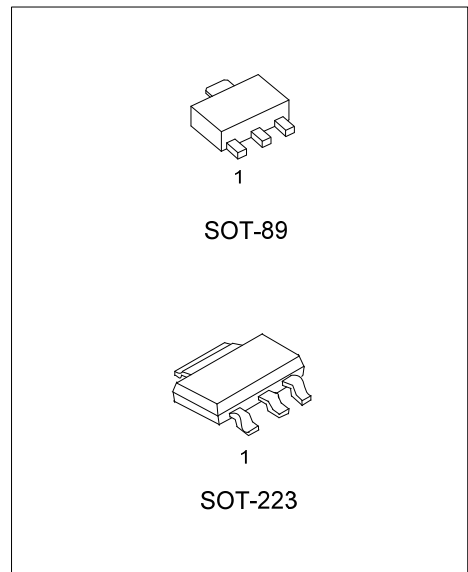
50V, 5A NPN LOW $V_{CE(SAT)}$ TRANSISTOR

DESCRIPTION

The **UTC USS4350** is a low $V_{CE(SAT)}$ NPN transistor designed for applications, such as: DC/DC converter, supply line switching, battery charger, linear voltage regulation, driver in low supply voltage applications and inductive load driver.

FEATURES

- * Collector-emitter saturation voltage:50V
- * High collector current gain (h_{FE}) under high I_C conditions
- * High collector current capability
- * Higher efficiency resulting in less heat generation
- * Complementary to UTC USS5350
- * Halogen Free



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
USS4350L-AA3-R	USS4350G-AA3-R	SOT-223	B	C	E	Tape Reel
USS4350L-AB3-R	USS4350G-AB3-R	SOT-89	B	C	E	Tape Reel

	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) AA3: SOT-223, AB3: SOT-89
	(3)Halogen Free	(3) G: Halogen Free, L: Lead Free

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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CB0}	60	V
Collector-Emitter Voltage		V_{CEO}	50	V
Emitter-Base Voltage		V_{EBO}	6	V
Collector Current	DC	I_C	3	A
	Peak	I_{CM}	5	A
Peak Base Current		I_{BM}	1	A
Power Dissipation (T _C =25°C) (Note 2)	SOT-89	P_D	1.4	W
	SOT-223		2	
Junction Temperature		T_J	150	°C
Operating Temperature		T_{OPR}	-65 ~ +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 DATA

PARAMETER		SYMBOL	MIN	TYP	MAX	UNIT
Junction to Ambient (Note)	SOT-89	θ_{JA}			90	°C/W
	SOT-223				62.5	

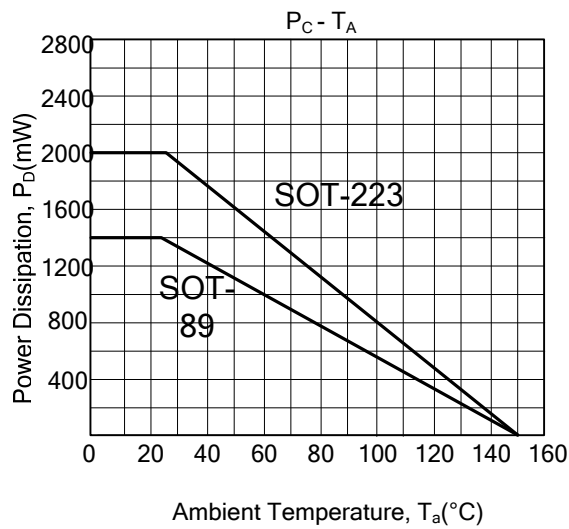
Note: Device mounted on a printed-circuit board; single sided copper; tinplated; mounting pad for collector 6 cm²

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-off Current	I_{CB0}	$V_{CB}=50\text{ V}, I_E=0$			100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=5\text{ V}, I_C=0$			100	nA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=500\text{ mA}, I_B=50\text{ mA}$			90	mV
		$I_C=1\text{ A}, I_B=50\text{ mA}$			170	mV
		$I_C=2\text{ A}, I_B=200\text{ mA}$ (Note)			290	mV
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=2\text{ A}, I_B=200\text{ mA}$ (Note)			1.2	V
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	$V_{CE}=2\text{ V}; I_C=1\text{ A}$ (Note)			1.1	V
DC Current Gain	h_{FE1}	$V_{CE}=2\text{ V}, I_C=500\text{ mA}$	200			
		$V_{CE}=2\text{ V}, I_C=1\text{ A}$ (Note)	200			
		$V_{CE}=2\text{ V}, I_C=2\text{ A}$ (Note)	100			
Equivalent On-Resistance	$R_{CE(SAT)}$	$I_C=2\text{ A}, I_B=200\text{ mA}$ (Note)		110	<145	mΩ
Transition Frequency	f_T	$I_C=100\text{ mA}, V_{CE}=5\text{ V}, f=100\text{ MHz}$	100			MHz
Collector Capacitance	C_C	$V_{CB}=10\text{ V}; I_E=I_e=0; f=1\text{ MHz}$			30	pF

Note: Pulse test: $t_P \leq 300\ \mu\text{s}$; Duty cycle $\leq 2\%$

■ TYPICAL CHARACTERISTIC



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.