



## 2SC4242

## NPN SILICON TRANSISTOR

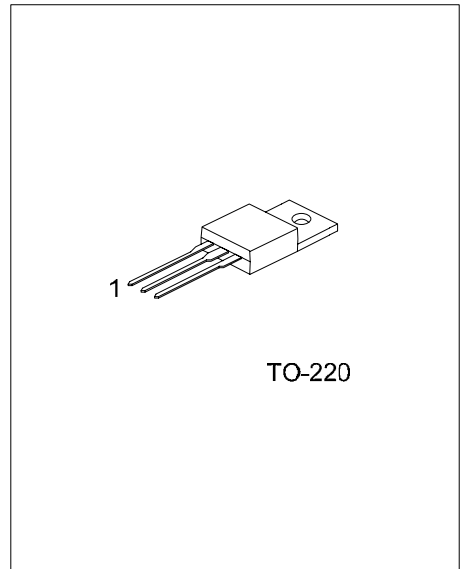
### SWITCHMODE SERIES NPN POWER TRANSISTORS

#### DESCRIPTION

The UTC 2SC4242 is a high-voltage, high-speed switching power transistor and designed particularly for 115 and 220V switch mode applications, such as switching regulators, inverters, DC-DC converter and general purpose power amplifiers.

#### FEATURES

- \* Low saturation voltage.
- \* Switching time:  $t_f=0.5 \mu s$  (Max.)@  $I_c=5.0A$
- \* High reliability



\*Pb-free plating product number: 2SC4242L

#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
2SC4242-TA3-T	2SC4242L-TA3-T	TO-220	B	C	E	Tube

<p>2SC4242L-TA3-T</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Plating</p>	<p>(1) T: Tube</p> <p>(2) TA3: TO-220</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p>
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### ■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Emitter Voltage		$V_{CEO}$	400	V
Collector-Base Voltage		$V_{CBO}$	450	V
Emitter-Base Voltage		$V_{EBO}$	8.0	V
Collector Current	Continuous	$I_C$	7.0	A
	Peak	$I_{CM}$	14	
Base Current		$I_B$	2.0	A
Total Power Dissipation @ $T_C=25$		$P_D$	40	W
Derate Above 25			0.32	W/°C
Junction Temperature		$T_J$	+150	°C
Storage Temperature		$T_{STG}$	-40 ~ +150	°C

Note: 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.

### ■ THERMAL DATA

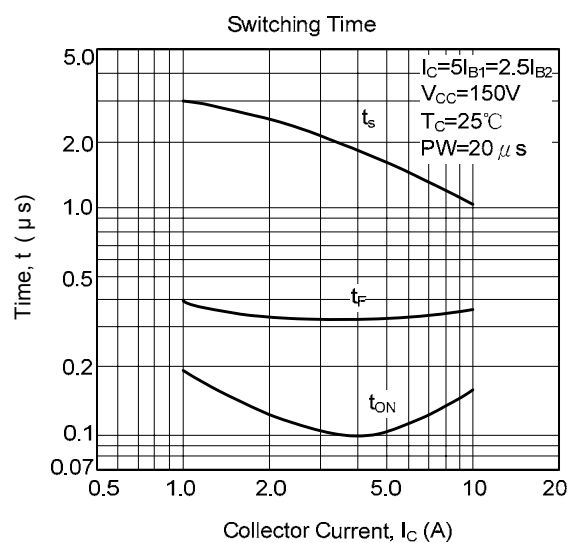
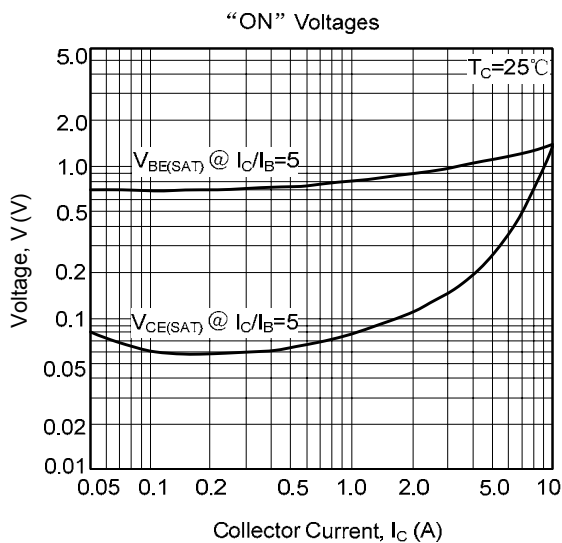
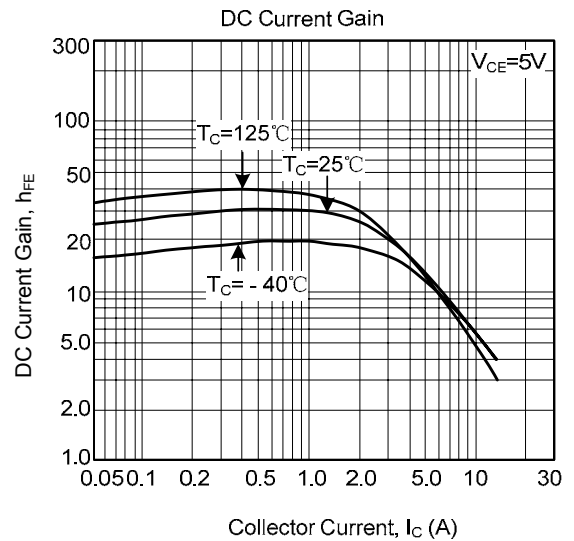
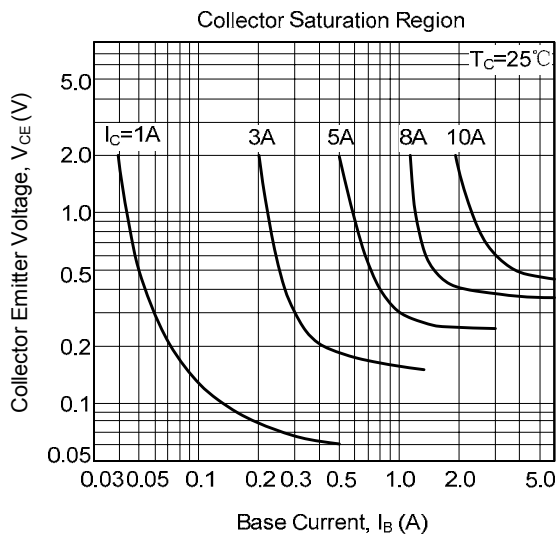
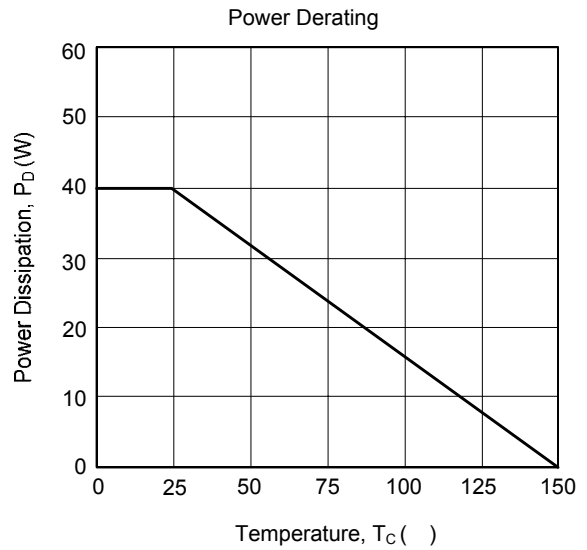
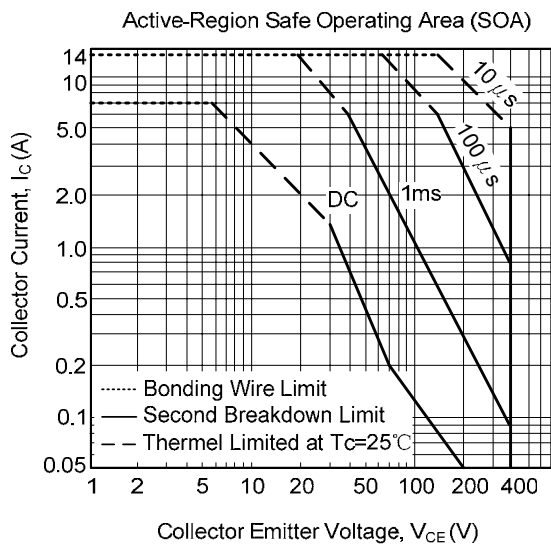
PARAMETER	SYMBOL	RATINGS	UNIT
Thermal Resistance Junction -Case	JC	4	°C/W

### ■ ELECTRICAL CHARACTERISTICS ( $T_C=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
<b>OFF CHARACTERISTICS</b>						
Collector-Emitter Sustaining Voltage	$BV_{CEO}$	$I_{CEO}=100\text{mA}$ , $I_B=0$	400			V
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_{CBO}=1.0\text{mA}$ , $I_E=0$	450			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_{EBO}=1.0\text{mA}$ , $I_C=0$	8.0			V
Collector Cutoff Current	$I_{CBO}$	$V_{CBO}=450\text{V}$ , $I_E=0$			100	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EBO}=8.0\text{V}$ , $I_C=0$			100	$\mu\text{A}$
<b>ON CHARACTERISTICS</b>						
DC Current Gain	$h_{FE}$	$I_C=4.0\text{A}$ , $V_{CE}=5.0\text{V}$	10			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=4.0\text{A}$ , $I_B=800\text{mA}$			0.8	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=4.0\text{A}$ , $I_B=800\text{mA}$			1.2	V
<b>SWITCHING CHARACTERISTICS</b>						
On Time	$t_{ON}$	$V_{CC}=150\text{V}$ , $I_C=5.0\text{A}$ $I_{B1}=-I_{B2}=1.0\text{A}$ , $R_L=30$			1.0	$\mu\text{s}$
Storage Time	$t_S$				2.5	$\mu\text{s}$
Fall Time	$t_F$				0.5	$\mu\text{s}$

Note: Pulse Test: Pulse Width=300 $\mu\text{s}$ , Duty Cycle  $\leq$  2.0%

## TYPICAL CHARACTERISTIC



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