



D4120P

Preliminary

NPN SILICON TRANSISTOR

MEDIUM VOLTAGE FAST-SWITCHING NPN TRANSISTOR

DESCRIPTION

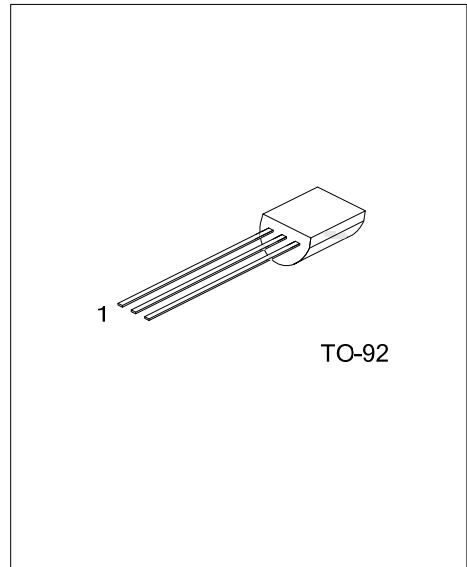
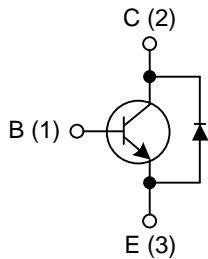
The UTC **D4120P** is a medium voltage fast-switching NPN power transistor. It is characterized by medium breakdown voltage, high current capability, high switching speed and high reliability.

The UTC **D4120P** is intended to be used in energy-saving lights, electronic ballasts, a power transform or a common power amplifier, etc.

FEATURES

- * Medium breakdown voltage
- * High current capability
- * High switching speed
- * High reliability
- * RoHS-compliant product

EQUIVALENT CIRCUIT



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
D4120PL-T92-B	D4120PG-T92-B	TO-92	B	C	E	Tape Box
D4120PL-T92-K	D4120PG-T92-K	TO-92	B	C	E	Bulk
D4120PL-T92-R	D4120PG-T92-R	TO-92	B	C	E	Tape Reel

<p>D4120PL-T92-B</p> <p>(1)Packing Type (2)Package Type (3)Halogen Free</p>	<p>(1) B: Tape Box, K: Bluk, R: Tape Reel (2) T92: TO-92 (3) Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATINGS ($T_C=25^\circ\text{C}$)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	350	V
Collector-Emitter Voltage	V_{CEO}	200	V
Emitter-Base Voltage	V_{EBO}	7	V
Continuous Collector Current	I_C	1.5	A
Collector Power Dissipation	P_C	1	W
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~150	$^\circ\text{C}$

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
Junction to Ambient	θ_{JA}	125	$^\circ\text{C/W}$

■ ELECTRICAL CHARACTERISTICS ($T_C=25^\circ\text{C}$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Sustaining Voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	200			V
Collector -Base Breakdown Voltage	$V_{(BR)EBO}$	$I_C=1\text{mA}, I_E=0$	350			V
Collector -Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=0, I_E=1\text{mA}$	7			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=300\text{V}, I_E=0$			100	μA
Collect Emitter Cut-off Current	I_{CEO}	$V_{CE}=200\text{V}, I_B=0$			50	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=7\text{V}, I_C=0$			10	μA
Static Forward Current Transfer Ratio	$h_{FE(1)}$	$I_C=0.2\text{A}, V_{CE}=5\text{V}$	8		50	
	$h_{FE(2)}$	$I_C=1.5\text{A}, V_{CE}=5\text{V}$	5			
Collector-Emitter Saturation Voltage	$V_{CE(sat)(1)}$	$I_C=0.4\text{A}, I_B=0.1\text{A}$			0.5	V
	$V_{CE(sat)(2)}$	$I_C=1\text{A}, I_B=0.5\text{A}$			2	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=1\text{A}, I_B=0.25\text{A}$			1.5	V
Fall Time	t_f	$V_{CC}=24\text{V}, I_C=0.5\text{A}, I_{B1}=-I_{B2}=0.1\text{A}$			0.5	μS
Storage Time	T_{stg}	$V_{CC}=24\text{V}, I_C=0.5\text{A}, I_{B1}=-I_{B2}=0.1\text{A}$			4	μS
Input Resistance	f_T	$V_{CE}=10\text{V}, I_C=0.5\text{A},$	4			MHz

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