

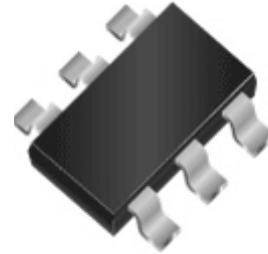
**WPT2F30**

Single, PNP, -30V, -3A, Power Transistor

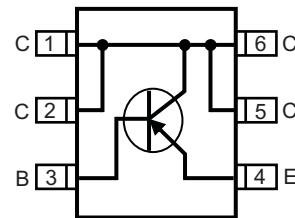
[Http://www.willsemi.com](http://www.willsemi.com)

**Descriptions**

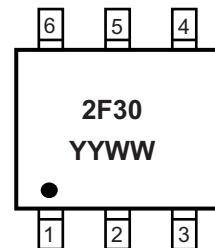
The WPT2F30 is PNP bipolar power transistor with very low saturation voltage. This device is suitable for use in charging circuit and other power management. Standard Product WPT2F30 is Pb-free.



**SOT-23-6L**



**Pin configuration (Top view)**



**2F30** = Device code  
**YY** = Year  
**WW** = Week  
**Marking**

**Features**

- Ultra low collector-to-emitter saturation voltage
- High DC current gain >100
- 3A continue collector current
- Small package SOT-23-6L.

**Applications**

- Charging circuit
- Power regulator
- Other power management in portable equipments

**Order information**

Device	Package	Shipping
WPT2F30-6/TR	SOT-23-6L	3000/Reel&Tape

**Absolute maximum ratings**

Parameter	Symbol	Value	Unit
Collector-emitter voltage	$V_{CEO}$	-30	V
Collector-base voltage	$V_{CBO}$	-30	V
Emitter-base voltage	$V_{EBO}$	-6	V
Continues collector current <sup>a</sup>	$I_C$	-3	A
Continues collector current <sup>b</sup>		-2	A
Pulse collector current <sup>c</sup>	$I_{CM}$	-6	A
Power dissipation <sup>a</sup>	$P_D$	1.2	W
Power dissipation <sup>b</sup>		0.8	W
Junction Temperature	$T_J$	150	°C
Lead Temperature	$T_L$	260	°C
Storage Temperature Range	$T_{stg}$	-55 to 150	°C

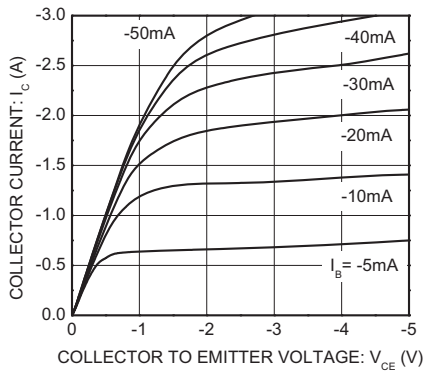
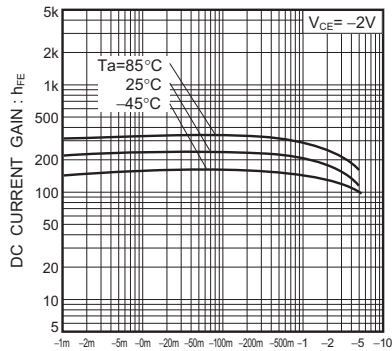
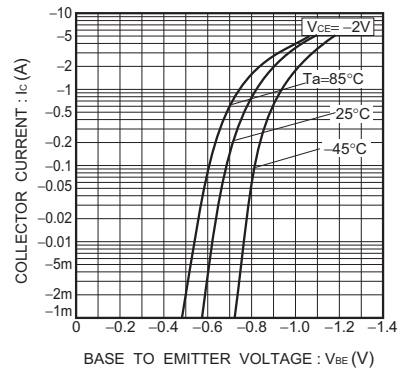
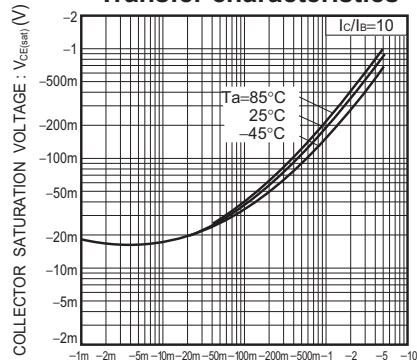
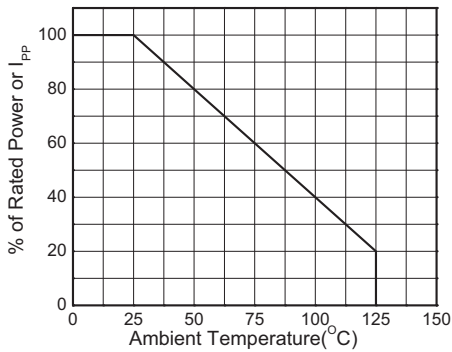
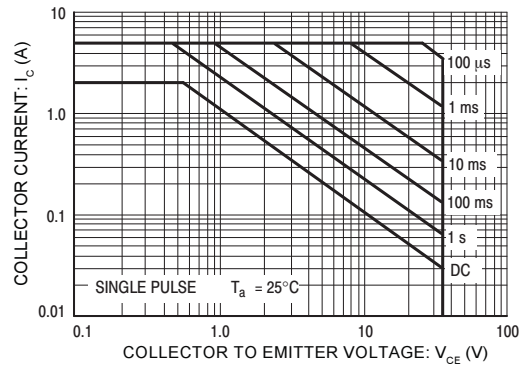
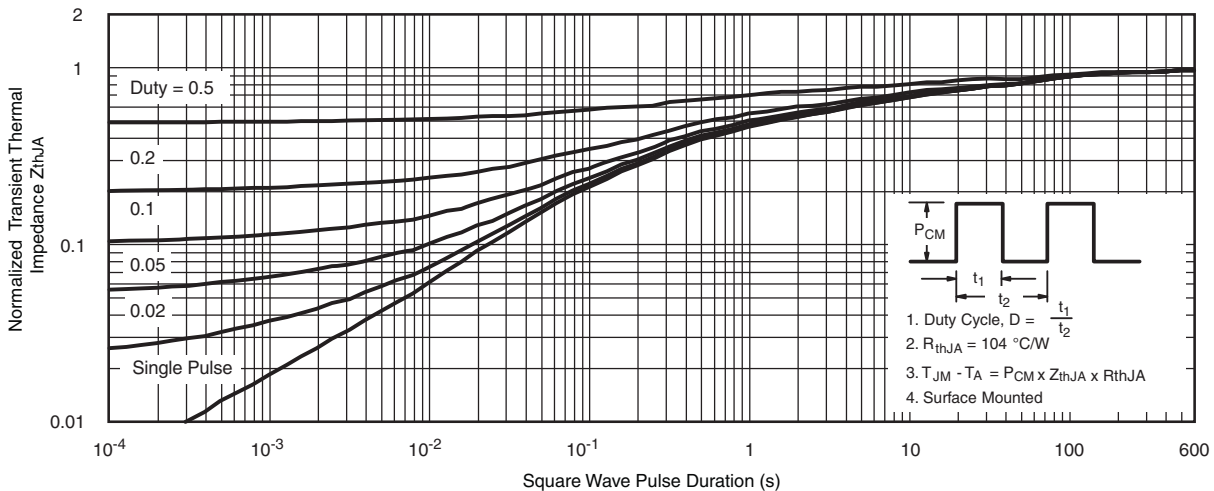
**Thermal resistance ratings**

Parameter	Symbol	Value	Unit
Junction-to-Ambient Thermal Resistance <sup>a</sup>	$R_{\theta JA}$	104	°C/W
Junction-to-Ambient Thermal Resistance <sup>b</sup>	$R_{\theta JA}$	155	°C/W

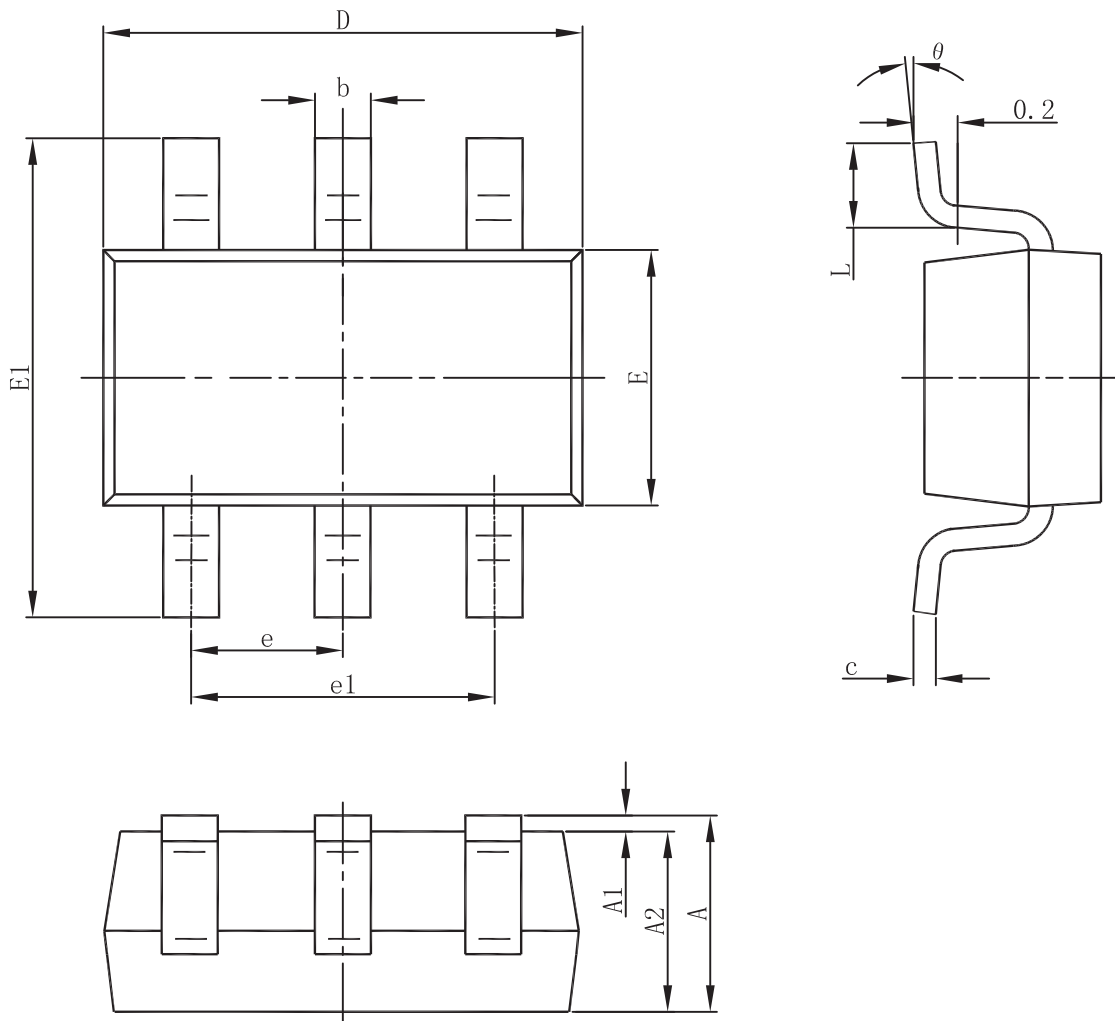
- a Surface mounted on FR-4 Board using 1 square inch pad size, 1oz copper  
b Surface mounted on FR-4 board using minimum pad size, 1oz copper  
c Pulse width=300 $\mu$ s, Duty Cycle<2%  
d Maximum junction temperature  $T_J=150^\circ\text{C}$ .

**Electronics Characteristics ( $T_a=25^\circ\text{C}$ , unless otherwise noted)**

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-emitter breakdown voltage	$BV_{CEO}$	$I_C=-10\text{mA}$ , $I_B=0\text{mA}$	-30			V
Collector-base breakdown voltage	$BV_{CBO}$	$I_C=-1\text{mA}$ , $I_E=0\text{mA}$	-30			V
Emitter-base breakdown voltage	$BV_{EBO}$	$I_E=-100\mu\text{A}$ , $I_C=0\text{mA}$	-6			V
Collector cutoff current	$I_{CBO}$	$V_{CB}=-30\text{V}$			-100	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB}=-5\text{V}$			-100	nA
Collector-emitter saturation voltage <sup>c</sup>	$V_{CE(sat)}$	$I_C=-2\text{A}$ , $I_B=-200\text{mA}$		-0.28	-0.35	V
		$I_C=-0.5\text{A}$ , $I_B=-5\text{mA}$		-0.20	-0.30	V
		$I_C=-0.8\text{A}$ , $I_B=-10\text{mA}$		-0.28	-0.39	V
Base-emitter saturation voltage <sup>c</sup>	$V_{BE(sat)}$	$I_C=-2\text{A}$ , $I_B=-200\text{mA}$		-1.0	-1.5	V
Base-emitter forward voltage	$V_{BE(on)}$	$I_C=-0.5\text{A}$ , $V_{CE}=-2\text{V}$		-0.7	-1.0	V
DC current gain <sup>c</sup>	$h_{FE}$	$V_{CE}=-2\text{V}$ , $I_C=-1\text{A}$	100	200	300	

**Typical Characteristics (Ta=25°C, unless otherwise noted)**

**Output characteristics**

**DC current gain**

**Transfer characteristics**

**C-E saturation voltage vs. Collector current**

**Power Derating**

**Safe operating area**

**Transient thermal response (Junction-to-Ambient)**

1. Duty Cycle,  $D = \frac{t_1}{t_2}$
2.  $R_{thJA} = 104^\circ\text{C/W}$
3.  $T_{JM} - T_A = P_{CM} \times Z_{thJA} \times R_{thJA}$
4. Surface Mounted

**Package outline dimensions**
**SOT-23-6L**


Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	1.050	1.150	1.250
A1	0.000	-	0.100
A2	1.050	1.100	1.150
b	0.300	0.400	0.500
c	0.100	-	0.200
D	2.820	2.920	3.020
E	1.500	1.600	1.700
E1	2.650	2.800	2.950
e	0.950(Basic)		
e1	1.800	1.900	2.000
L	0.300	-	0.600
θ	0°	-	8°