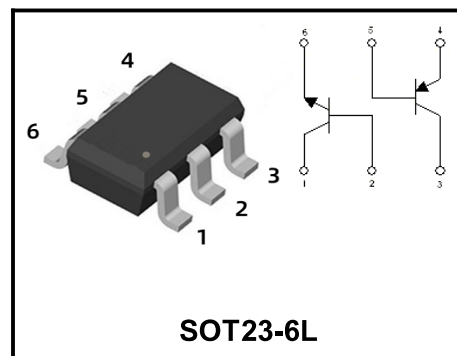


Plastic-Encapsulate Transistors

Dual 40V complementary transistors



Features

- ◆40V complementary device
- ◆High h_{FE}
- ◆Mounting cost and area can be cut in half

Marking Code

YFW2045F

2045

Tr1 NPN and Tr2 PNP Absolute Maximum Ratings ($T_a=25^{\circ}\text{C}$)

Symbol	Parameter	Value		Unit
		NPN	PNP	
V_{CBO}	Collector-Base Voltage	40	-40	V
V_{CEX}	Collector-Emitter Voltage	40	-40	V
V_{CEO}	Collector-Emitter Voltage	30	-30	V
V_{EBO}	Emitter-Base Voltage	7	-7	V
I_C	Collector Current- Continuous	1.5	-1.5	A
I_{CM}	Collector Current- Peak	5	-5	A
P_C	Collector Power Dissipation	350	350	mW
$R_{\theta JA}$	Thermal Resistance from Junction to Ambient	357	357	$^{\circ}\text{C/W}$
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150		$^{\circ}\text{C}$

Tr1 NPN (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=100\mu A, I_E=0$	40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=10mA, I_B=0$	30			V
Collector-emitter breakdown voltage	$V_{(BR)CEX}$	$I_C=1\mu A, V_{BE(off)}=-0.5V$	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=100\mu A, I_C=0$	7			V
Collector cut-off current	I_{CBO}	$V_{CB}=32V, I_E=0$			20	nA
Collector cut-off current	I_{CER}	$V_{CE}=16V, R_{\leq 1k\Omega}$			20	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=6V, I_C=0$			20	nA
DC current gain	h_{FE}^*	$V_{CE}=2V, I_C=100mA$	180		500	
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=750mA, I_B=15mA$			0.375	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$				1.2	V

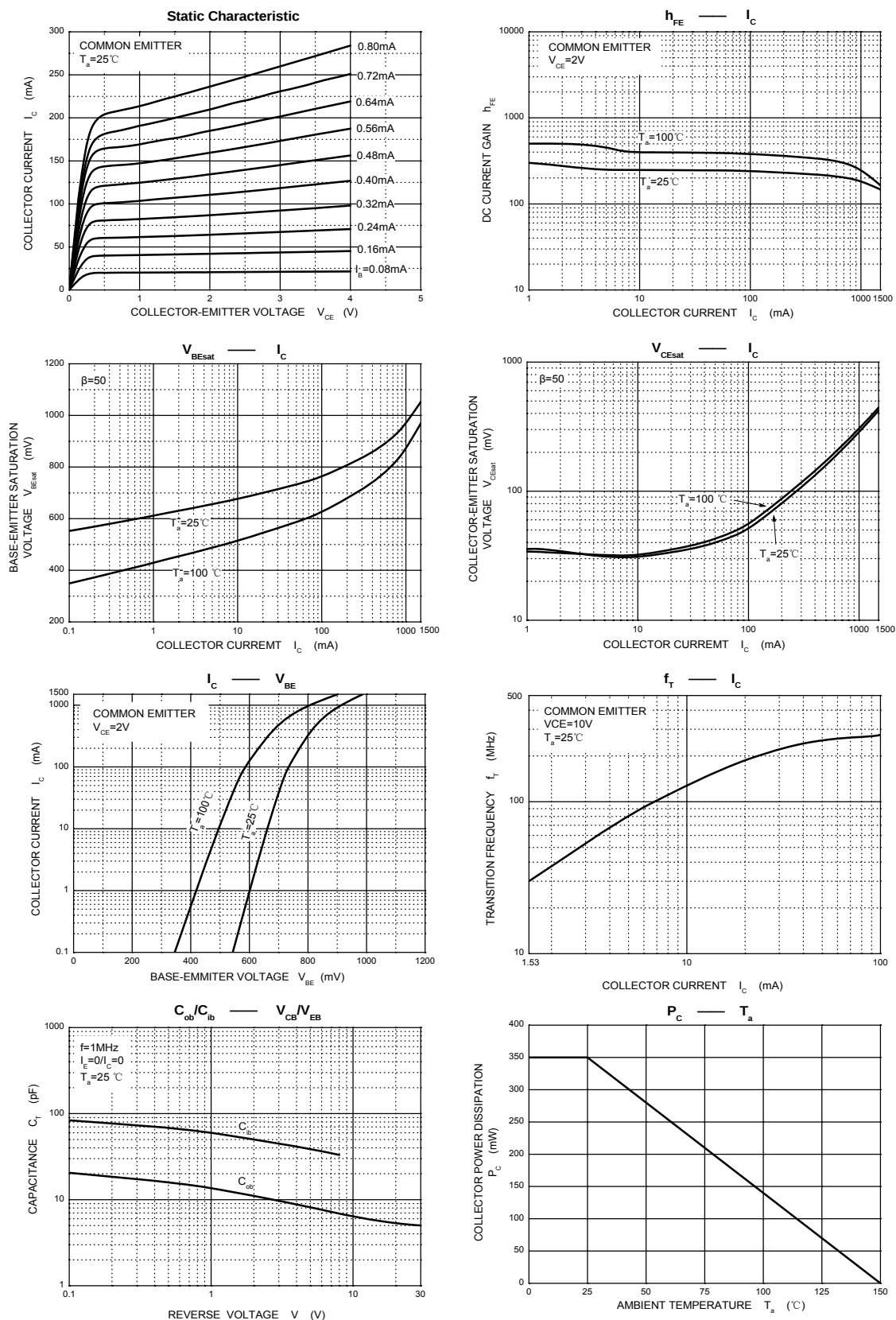
Tr2 PNP (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-100\mu A, I_E=0$	-40			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=-10mA, I_B=0$	-30			V
Collector-emitter breakdown voltage	$V_{(BR)CEX}$	$I_C=-1\mu A, V_{BE(off)}=0.5V$	-40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-100\mu A, I_C=0$	-7			V
Collector cut-off current	I_{CBO}	$V_{CB}=-32V, I_E=0$			-20	nA
Collector cut-off current	I_{CER}	$V_{CE}=-16V, R_{\leq 1k\Omega}$			-20	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=-6V, I_C=0$			-20	nA
DC current gain	h_{FE}^*	$V_{CE}=-2V, I_C=-100mA$	180		500	
Collector-emitter saturation voltage	$V_{CE(sat)}^*$	$I_C=-750mA, I_B=-15mA$			-0.375	V
Base-emitter saturation voltage	$V_{BE(sat)}^*$				-1.2	V

*Pulse Test : Pulse Width $\leq 300\mu s$, Duty Cycles $\leq 2\%$.

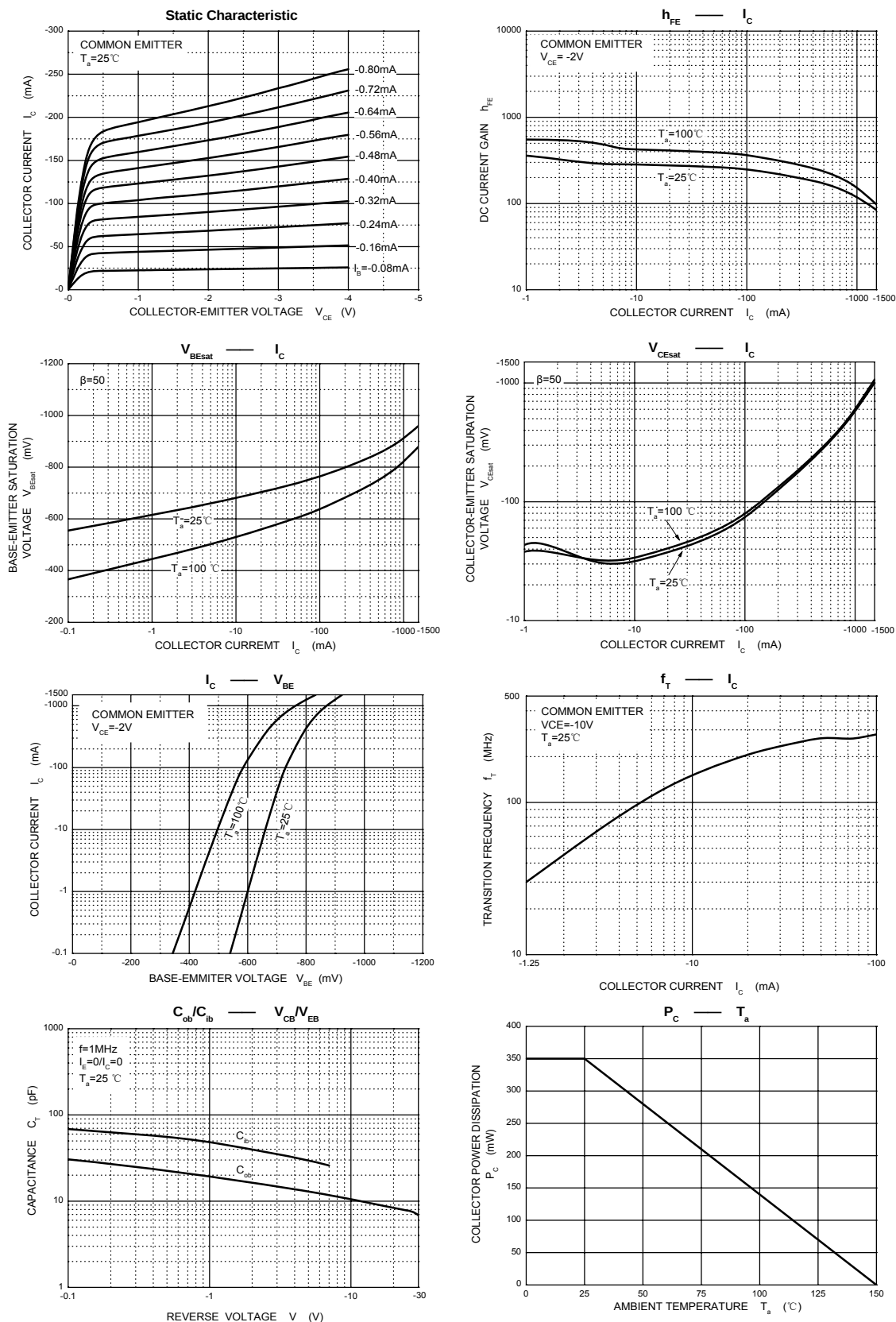
Typical Characteristics

NPN Transistor



Typical Characteristics

PNP Transistor



Ordering information

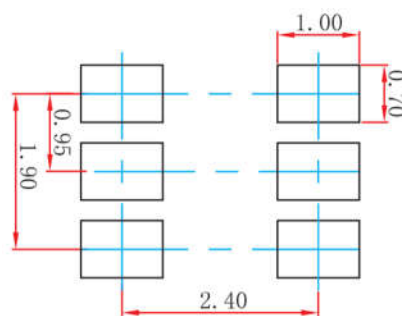
Package	Packing Description	Packing Quantity
SOT23-6L	Tape/Reel, 7" reel	3000PCS/Reel 120000PCS/Carton

Package Dimensions

SOT23-6L

Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	1.05	1.25	41	49
A1	0	0.10	0	3.9
A2	1.05	1.15	41	45
b	0.30	0.50	11.8	19.7
c	0.10	0.20	3.9	7.9
D	2.82	3.02	111	119
E1	1.50	1.70	45	67
E	2.65	2.95	104	116
e	0.950(BSC)		37(BSC)	
e1	1.80	2.00	71	79
L	0.30	0.60	11.8	23.6
θ	0°	8°	0°	8°

The recommended mounting pad size



Disclaimer

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