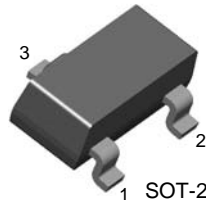


# FJV42

## NPN High Voltage Transistor



1 SOT-23  
Marking: 1DF  
1. Base 2. Emitter 3. Collector

### Absolute Maximum Ratings \* $T_a = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
$V_{CB0}$	Collector-Base Voltage	350	V
$V_{CEO}$	Collector-Emitter Voltage	350	V
$V_{EBO}$	Emitter-Base Voltage	6	V
$I_C$	Collector Current	500	mA
$T_{STG}$	Storage Temperature Range	-55~150	$^\circ\text{C}$
$P_C$	Collector Power Dissipation	350	mW

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

### Thermal Characteristics

Symbol	Parameter	Value	Units
$R_{TH(j-a)}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C/W}$

### Electrical Characteristics $T_C = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Test Condition	MIN	MAX	Units
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage*	$I_C = 5.0\text{ mA}, I_B = 0$	350		V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage	$I_C = 100\text{ uA}, I_E = 0$	350		V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage	$I_E = 100\text{ uA}, I_C = 0$	6		V
$I_{CBO}$	Collector-Cutoff Current	$V_{CB} = 200\text{ V}, I_E = 0$		0.1	$\mu\text{A}$
$I_{EBO}$	Emitter-Cutoff Current	$V_{EB} = 5.0\text{ V}, I_C = 0$		0.1	$\mu\text{A}$
$h_{FE}$	DC Current Gain*	$I_C = 1.0\text{ mA}, V_{CE} = 10\text{ V}$ $I_C = 10\text{ mA}, V_{CE} = 10\text{ V}$ $I_C = 30\text{ mA}, V_{CE} = 10\text{ V}$	25 40 40		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage *	$I_C = 20\text{ mA}, I_B = 2.0\text{ mA}$		0.5	V
$V_{BE(sat)}$	Base-Emitter Breakdown Voltage *	$I_C = 20\text{ mA}, I_B = 2.0\text{ mA}$		0.9	V
$f_r$	Current Gain - Bandwidth Product	$I_C = 10\text{ mA}, V_{CE} = 20\text{ V}, f = 100\text{ MHz}$	50		MHz
$C_{cb}$	Output Capacitance	$V_{CB} = 20\text{ V}, I_E = 0, f = 1.0\text{ MHz}$		3	pF

\* Pulse Test:  $PW \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## Typical Characteristics

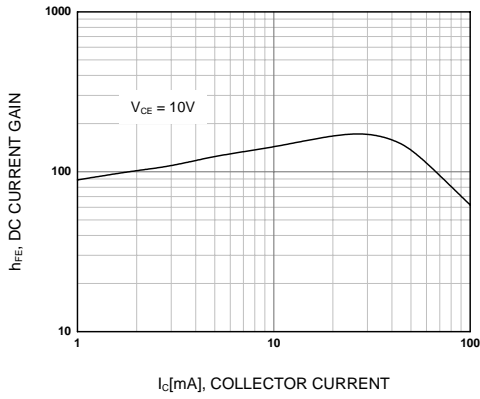


Figure 1. DC current Gain

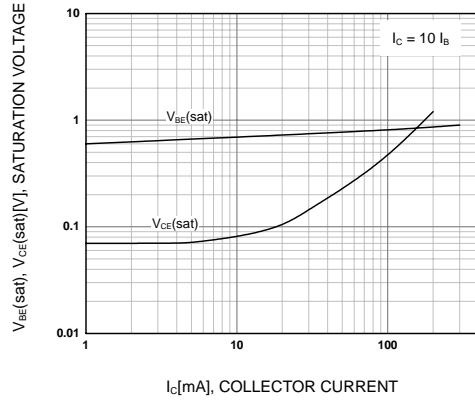


Figure 2. Collector-Emitter Saturation Voltage  
Base-Emitter Saturation Voltage

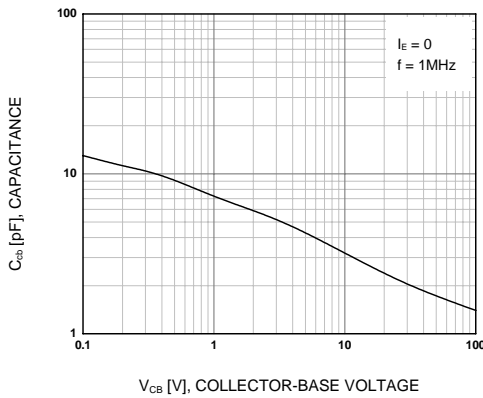


Figure 3. Collector-Base Capacitance

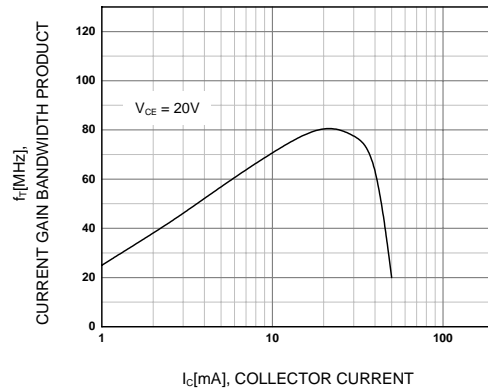
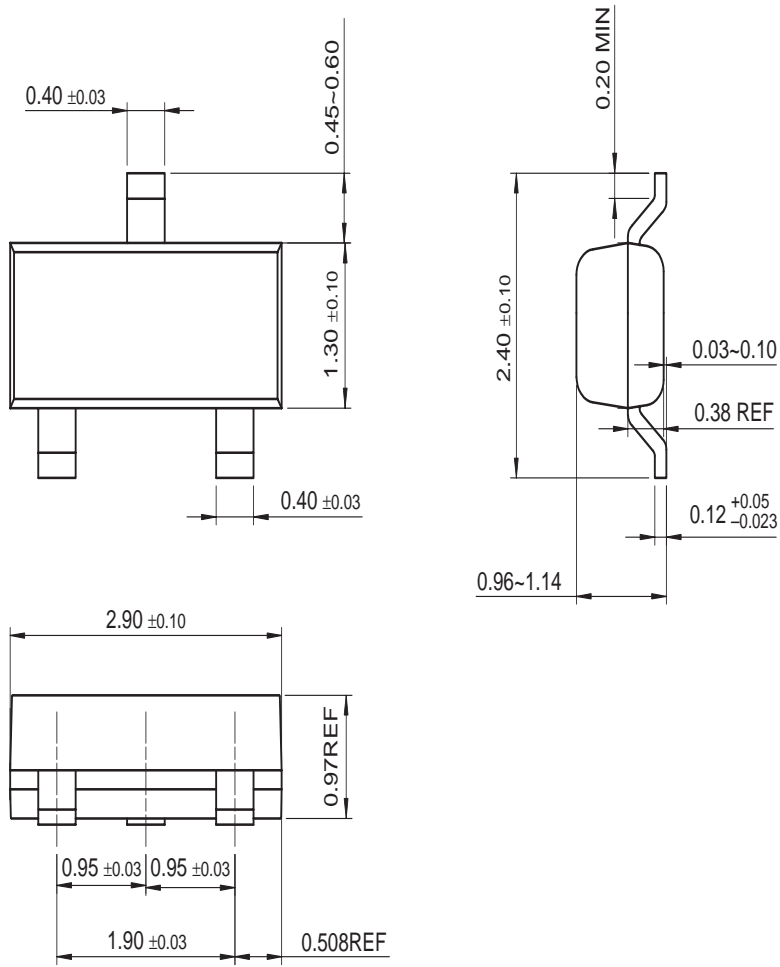


Figure 4. Current Gain Bandwidth Product

# Package Dimensions

## SOT-23



Dimensions in Millimeters



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FACT <sup>®</sup>	OPTOPLANAR <sup>TM</sup> <sup>®</sup>	SuperSOT <sup>TM</sup> -6	
FAST <sup>®</sup>	PACMAN <sup>TM</sup>	SuperSOT <sup>TM</sup> -8	
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