

# TO-252-2L TO-251-3L Plastic-Encapsulate MOSFETS

**13003** TRANSISTOR ( NPN )  
**JXV038**

## FEATURES

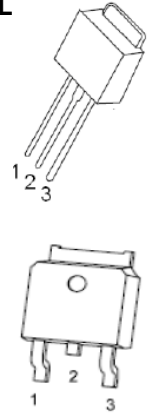
Power Switching Applications

### MAXIMUM RATINGS( $T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	700	V
$V_{CEO}$	Collector-Emitter Voltage	400	V
$V_{EBO}$	Emitter-Base Voltage	9	V
$I_C$	Collector Current -Continuous	1.5	A
$P_c$	Collector Dissipation	1.25	W
$T_J, T_{stg}$	Junction and Storage Temperature	-55~+150	$^\circ\text{C}$

TO-251-3L/TO-252-2L

1. BASE
2. COLLECTOR
3. EMITTER



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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=1\text{mA}, I_E=0$	700			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=10\text{mA}, I_B=0$	400			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1\text{mA}, I_C=0$	9			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=700\text{V}, I_E=0$			1	mA
Collector cut-off current	$I_{CEO}$	$V_{CE}=400\text{V}, I_B=0$			0.5	mA
Emitter cut-off current	$I_{EBO}$	$V_{EB}=9\text{V}, I_C=0$			1	mA
DC current gain	$h_{FE(1)}$	$V_{CE}=5\text{V}, I_C=0.5\text{A}$	8		40	
	$h_{FE(2)}$	$V_{CE}=5\text{V}, I_C=1.5\text{A}$	5			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=1\text{A}, I_B=250\text{mA}$			0.6	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=1\text{A}, I_B=250\text{mA}$			1.2	V
Base-emitter voltage	$V_{BE}$	$I_E=2\text{A}$			3	V
Transition frequency	$f_T$	$V_{CE}=10\text{V}, I_C=100\text{mA}$ $f=1\text{MHz}$	5			MHz
Fall time	$t_f$	$I_C=1\text{A}, I_{B1}=-I_{B2}=0.2\text{A}$ $V_{CC}=100\text{V}$			0.5	$\mu\text{s}$
Storage time	$t_s$	$I_C=250\text{mA}$	2		4	$\mu\text{s}$

### CLASSIFICATION OF $h_{FE(1)}$

Rank							
Range	8-10	10-15	15-20	20-25	25-30	30-35	35-40

### CLASSIFICATION OF $t_s$

Rank	A1	A2	B1	B2
Range	2-2.5 ( $\mu\text{s}$ )	2.5-3 ( $\mu\text{s}$ )	3-3.5 ( $\mu\text{s}$ )	3.5-4 ( $\mu\text{s}$ )