

TRANSISTOR(NPN)

FEATURES

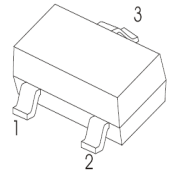
- High Voltage Transistor

MARKING:M1F

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	160	V
V_{CEO}	Collector-Emitter Voltage	140	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current	600	mA
P_C	Collector Power Dissipation	225	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	556	$^{\circ}\text{C}/\text{W}$
T_J	Junction Temperature	150	$^{\circ}\text{C}$
T_{stg}	Storage Temperature	-55~+150	$^{\circ}\text{C}$

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1. BASE
2. EMITTER
3. COLLECTOR

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

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1\text{mA}$, $I_E=0$	160			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}^*$	$I_C=1\text{mA}$, $I_B=0$	140			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=0.01\text{mA}$, $I_C=0$	6			V
Collector cut-off current	I_{CBO}	$V_{CB}=100\text{V}$, $I_E=0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4\text{V}$, $I_C=0$			50	nA
DC current gain	$h_{FE(1)}$	$V_{CE}=5\text{V}$, $I_C=1\text{mA}$	60			
	$h_{FE(2)}$	$V_{CE}=5\text{V}$, $I_C=10\text{mA}$	60		250	
	$h_{FE(3)}$	$V_{CE}=5\text{V}$, $I_C=50\text{mA}$	20			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C=10\text{mA}$, $I_B=1\text{mA}$			0.15	V
	$V_{CE(sat)2}$	$I_C=50\text{mA}$, $I_B=5\text{mA}$			0.25	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	$I_C=10\text{mA}$, $I_B=1\text{mA}$			1	V
	$V_{BE(sat)2}$	$I_C=50\text{mA}$, $I_B=5\text{mA}$			1.2	V

*Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycles $\leq 2.0\%$.