



Plastic-Encapsulate Transistors

DUAL TRANSISTOR (PNP+PNP)

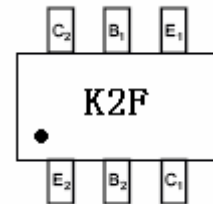
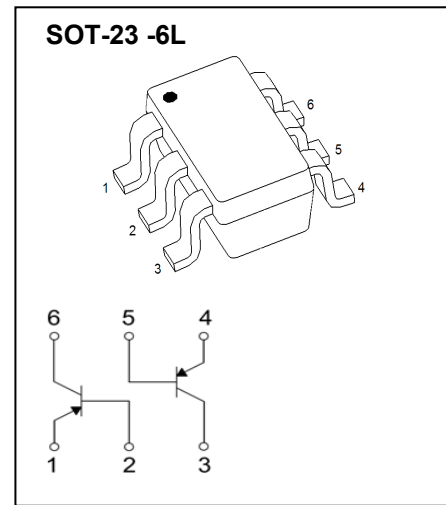
FEATURE

- Complementary NPN Type available MMDT2222ADW

MARKING: K2F

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

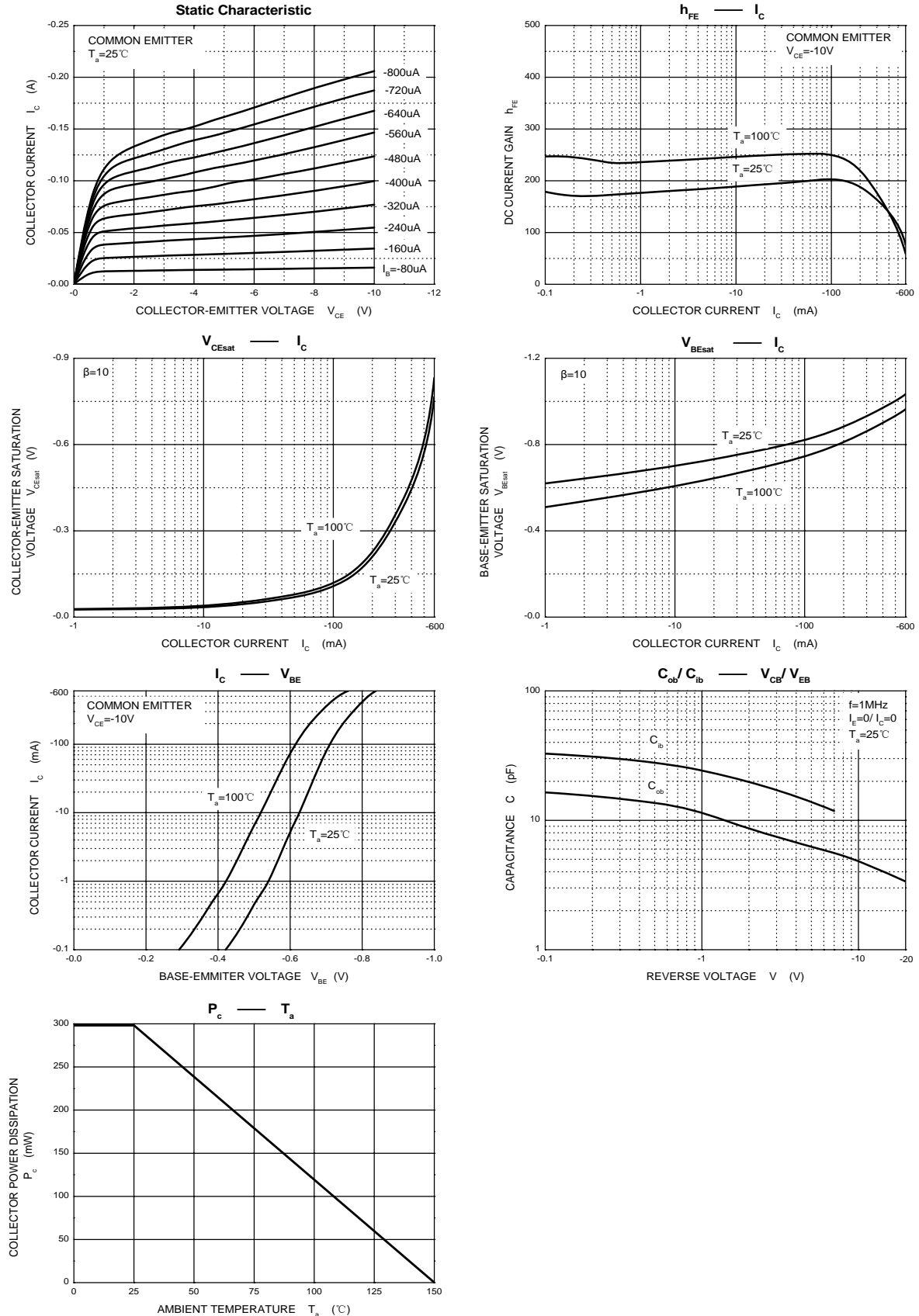
Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-60	V
V_{CEO}	Collector-Emitter Voltage	-60	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current -Continuous	-600	mA
P_C	Collector Power Dissipation	300	mW
T_J	Junction Temperature	150	$^\circ\text{C}$
T_{stg}	Storage Temperature	-55-150	$^\circ\text{C}$



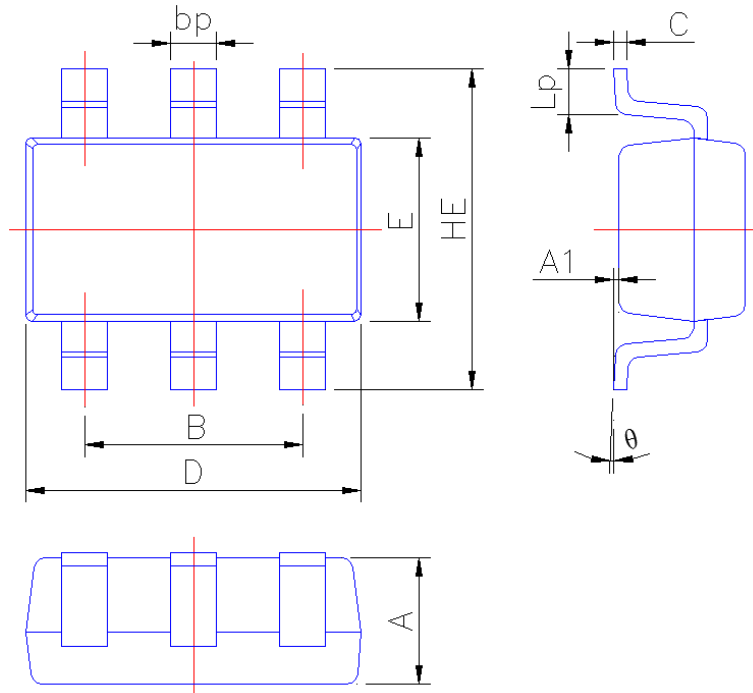
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = -10\mu\text{A}, I_E = 0$	-60		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = -10\text{mA}, I_B = 0$	-60		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = -10\mu\text{A}, I_C = 0$	-5		V
Collector cut-off current	I_{CBO}	$V_{CB} = -50\text{V}, I_E = 0$		-10	nA
Collector cut-off current	I_{CEX}	$V_{CE} = -30\text{V}, V_{EB(off)} = -0.5\text{V}$		-50	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -5\text{V}, I_C = 0$		-10	nA
DC current gain	$h_{FE(1)}$	$V_{CE} = -10\text{V}, I_C = -0.1\text{mA}$	75		
	$h_{FE(2)}$	$V_{CE} = -10\text{V}, I_C = -1\text{mA}$	100		
	$h_{FE(3)}$	$V_{CE} = -10\text{V}, I_C = -10\text{mA}$	100		
	$h_{FE(4)}$	$V_{CE} = -10\text{V}, I_C = -150\text{mA}$	100	300	
	$h_{FE(5)}$	$V_{CE} = -10\text{V}, I_C = -500\text{mA}$	50		
Collector-emitter saturation voltage	$V_{CE(sat)1}$	$I_C = -150\text{mA}, I_B = -15\text{mA}$		-0.4	V
	$V_{CE(sat)2}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$		-1.6	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	$I_C = -150\text{mA}, I_B = -15\text{mA}$		-1.3	V
	$V_{BE(sat)2}$	$I_C = -500\text{mA}, I_B = -50\text{mA}$		-2.6	V
Transition frequency	f_T	$V_{CE} = -20\text{V}, I_C = -50\text{mA}, f = 100\text{MHz}$	200		MHz
Output Capacitance	C_{ob}	$V_{CB} = -10\text{V}, I_E = 0, f = 1\text{MHz}$		8	pF
Input Capacitance	C_{ib}	$V_{EB} = -2\text{V}, I_C = 0, f = 1\text{MHz}$		30	pF
Delay time	t_d	$V_{CC} = -30\text{V}, I_C = -150\text{mA}, I_{B1} = -15\text{mA}$		10	nS
Rise time	t_r		40	nS	
Storage time	t_s	$V_{CC} = -6\text{V}, I_C = -150\text{mA}, I_{B1} = I_{B2} = -15\text{mA}$		225	nS
Fall time	t_f		60	nS	

Typical Characteristics



SOT-23-6L Package Outline Dimensions



Symbol	Dimension in Millimeters	
	Min	Max
A	1.05	1.20
A1	0.010	0.100
B	1.80	2.00
bp	0.35	0.50
C	0.09	0.15
D	2.80	3.00
E	1.50	1.70
HE	2.60	3.00
Lp	0.25	0.55
θ	2°	6°