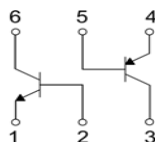
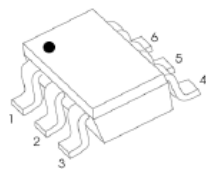


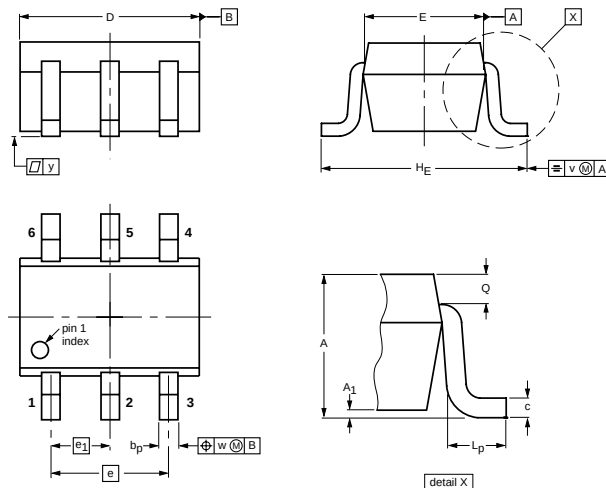
FEATURE

- Epitaxial planar die construction
- One 2222A NPN
One 2907A PNP
- Ideal for power amplification and switching

MARKING: K27



SOT-363



0 1 2 mm
scale

DIMENSIONS (mm are the original dimensions)

UNIT	A	A ₁ max	b _p	c	D	E	e	e ₁	H _E	L _p	Q	v	w	y
mm	1.1 0.8	0.1	0.30 0.20	0.25 0.10	2.2 1.8	1.35 1.15	1.3	0.65	2.2 2.0	0.45 0.15	0.25 0.15	0.2	0.2	0.1

NPN 2222A

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	75	V
V _{CEO}	Collector-Emitter Voltage	40	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current -Continuous	600	mA
P _C	Collector Power Dissipation	200	mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

MMDT2227

ELECTRICAL CHARACTERISTICS (Ta=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C = 10\mu A, I_E = 0$	75		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C = 10mA, I_B = 0$	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E = 10\mu A, I_C = 0$	6		V
Collector cut-off current	I_{CBO}	$V_{CB} = 60V, I_E = 0$		10	nA
Collector cut-off current	I_{CEX}	$V_{CE} = 60V, V_{EB(off)} = 3V$		10	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 3V, I_C = 0$		10	nA
DC current gain	$h_{FE(1)}^*$	$V_{CE} = 10V, I_C = 0.1mA$	35		
	$h_{FE(2)}^*$	$V_{CE} = 10V, I_C = 1mA$	50		
	$h_{FE(3)}^*$	$V_{CE} = 10V, I_C = 10mA$	75		
	$h_{FE(4)}^*$	$V_{CE} = 10V, I_C = 150mA$	100	300	
	$h_{FE(5)}^*$	$V_{CE} = 10V, I_C = 500mA$	40		
	$h_{FE(6)}^*$	$V_{CE} = 1V, I_C = 150mA$	35		
Collector-emitter saturation voltage	$V_{CE(sat)1}^*$	$I_C = 150mA, I_B = 15mA$		0.3	V
	$V_{CE(sat)2}^*$	$I_C = 500mA, I_B = 50mA$		1	V
Base-emitter saturation voltage	$V_{BE(sat)1}^*$	$I_C = 150mA, I_B = 15mA$	0.6	1.2	V
	$V_{BE(sat)2}^*$	$I_C = 500mA, I_B = 50mA$		2	V
Transition frequency	f_T	$V_{CE} = 20V, I_C = 20mA, f = 100MHz$	300		MHz
Output Capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$		8	pF
Input Capacitance	C_{ib}	$V_{EB} = 0.5V, I_C = 0, f = 1MHz$		25	pF
Noise Figure	NF	$V_{CE} = 10V, I_C = 100\mu A, f = 1KHz, R_s = 1K\Omega$		4	dB

*pulse test

Switching characteristics

Parameter	Symbol	Test conditions	Min	Max	Unit
Delay time	t_d	$V_{CC} = 30V, I_C = 150mA, V_{BE(off)} = 0.5V, I_{B1} = 15mA$		10	ns
Rise time	t_r			25	ns
Storage time	t_s			225	ns
Fall time	t_f			60	ns

MMDT2227

PNP 2907A

MAXIMUM RATINGS (T_a=25°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	200	mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C = -10μA, I _E =0	-60		V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = -10mA, I _B =0	-60		V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =-10μA, I _C =0	-5		V
Collector cut-off current	I _{CBO}	V _{CB} =-50V, I _E =0		-10	nA
Collector cut-off current	I _{CEX}	V _{CE} =-30V, V _{EB(off)} =-0.5V		-50	nA
Emitter cut-off current	I _{EBO}	V _{EB} =-3V, I _C =0		-10	nA
DC current gain	h _{FE(1)} *	V _{CE} =-10V, I _C = -0.1mA	75		
	h _{FE(2)} *	V _{CE} =-10V, I _C = -1mA	100		
	h _{FE(3)} *	V _{CE} =-10V, I _C =-10mA	100		
	h _{FE(4)} *	V _{CE} =-10V, I _C = -150mA	100	300	
	h _{FE(5)} *	V _{CE} =-10V, I _C =-500mA	50		
Collector-emitter saturation voltage	V _{CE(sat)1} *	I _C =-150mA, I _B =-15mA		-0.4	V
	V _{CE(sat)2} *	I _C =-500mA, I _B =-50mA		-1.6	V
Base-emitter saturation voltage	V _{BE(sat)1} *	I _C =-150mA, I _B =-15mA		-1.3	V
	V _{BE(sat)2} *	I _C =-500mA, I _B =-50mA		-2.6	V
Transition frequency	f _T	V _{CE} =-20V, I _C = -50mA, f=100MHz	200		MHz
Output Capacitance	C _{ob}	V _{CB} =-10V, I _E = 0, f=1MHz		8	pF
Input Capacitance	C _{ib}	V _{EB} =-2V, I _C = 0, f=1MHz		30	pF
Delay time	t _d	V _{CC} =-30V, I _C =-150mA, I _{B1} =-15mA		10	ns
Rise time	t _r			40	ns
Storage time	t _s			225	ns
Fall time	t _f			60	ns

*pulse test