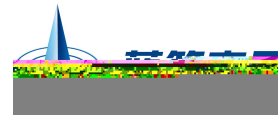


DATA SHEET

B		RθJA=625 SOT363-6L SOT-363	
C			
D			
E			

MMDT3946

Rev. E Oct.-2021



DATA SHEET

/ Descriptions

SOT-363

Silicon PNP and NPN transistors in SO-8 Plastic

Package

/ Features

h_{FE} $V_{CE(sat)}$

High current low collector to emitter saturation voltage F Protection

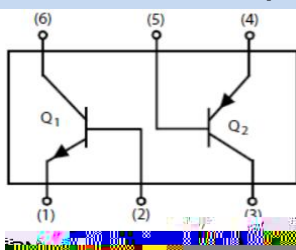
/ Applications

General purpose amplifier and switching

O

O

/ Equivalent Circuit



/ Pinning



PN 1

Emitter

PN 2

s

PN

collector

/ h_{FE} Classifications & Marking

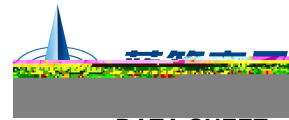
See Marking instructions.

/ Absolute Maximum Ratings(Ta=25) (NPN)

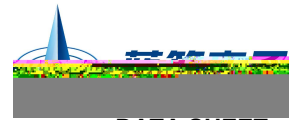
P r m t r	S mbol	R tin	nit
oll ctor to s olt	o	0	
oll ctor to Emitt r olt	EO	0	
Emitt r to s olt	E O	.0	
oll ctor rr nt		200	m
oll ctor Pow r issip tion	P	200	mW
	*P	0	mW
h rm l R sist nc nction to mbi nt	R _θ	2	°C/W
nction mp r t r		1 0	°C
Stor mp r t r R n	st	- ~1 0	°C

/ Absolute Maximum Ratings(Ta=25) (PNP)

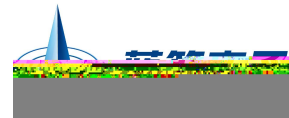
P r m t r	S mbol	R tin	nit
oll ctor to s olt	o	- 0	
oll ctor to Emitt r olt	EO	- 0	
Emitt r to s olt	E O	- .0	
oll ctor rr nt		-200	m
oll ctor Pow r issip tion	P	00	mW
h rm l R sist nc nction to mbi nt	R _θ	2	°C/W
nction mp r t r		1 0	°C
Stor mp r t r R n	st	- ~1 0	°C


/ Electrical Characteristics(Ta=25 °C) (NPN)

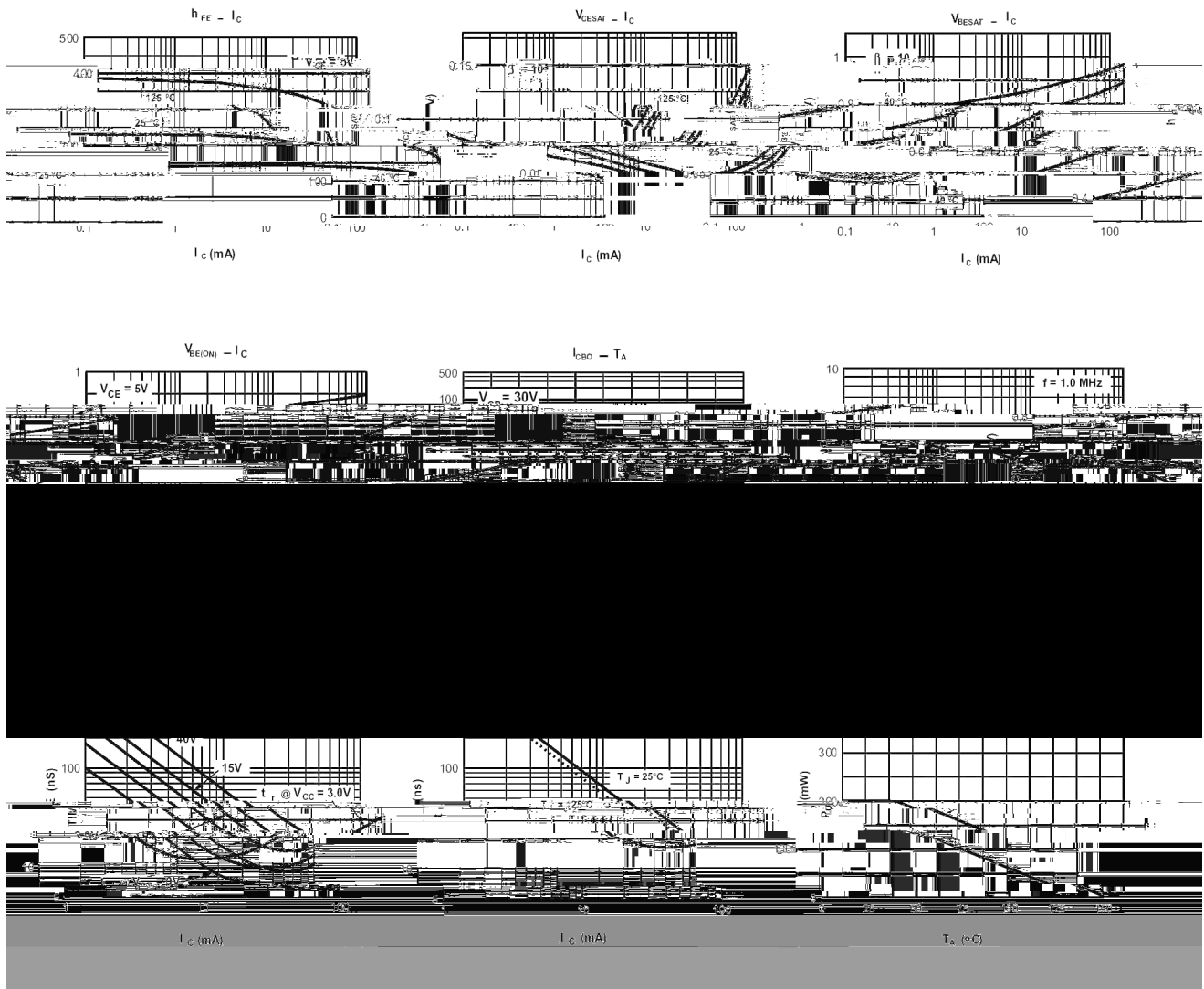
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 10\text{mA}$, $I_E = 0$	0			V
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 1.0\text{mA}$, $I_E = 0$	0			V
Emitter to Collector Saturation Voltage	$V_{EC(sat)}$	$I_E = 10\text{mA}$, $I_C = 0$	0			V
Collector Turn-Off Time	t_{off}	$I_C = 0$, $I_E = 0$			0.0	ns
Emitter Turn-Off Time	t_{off}	$I_E = 0$, $I_C = 0$			0.0	ns
Current Gain	h_{FE1}	$I_C = 1.0\text{mA}$, $I_E = 10\text{mA}$	100		300	
	h_{FE2}	$I_C = 10\text{mA}$, $I_E = 100\text{mA}$	10			
	h_{FE}	$I_C = 10\text{mA}$, $I_E = 10\text{mA}$	10			
	h_{FE}	$I_C = 10\text{mA}$, $I_E = 1.0\text{mA}$	70			
	h_{FE}	$I_C = 10\text{mA}$, $I_E = 0.1\text{mA}$	10			
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	$I_C = 1.0\text{mA}$, $I_E = 1.0\text{mA}$			0.2	V
	$V_{CE(sat)2}$	$I_C = 1.0\text{mA}$, $I_E = 1.0\text{mA}$			0.2	V
Base-Emitter Saturation Voltage	$V_{BE(sat)1}$	$I_C = 1.0\text{mA}$, $I_E = 1.0\text{mA}$	0.7		0.8	V
	$V_{BE(sat)2}$	$I_C = 1.0\text{mA}$, $I_E = 1.0\text{mA}$	0.7		0.8	V
Transition Frequency	f_T	$I_C = 10\text{mA}$, $f = 100\text{MHz}$	100			MHz
Output Capacitance	C_{ob}	$I_C = 1.0\text{mA}$, $f = 1.0\text{MHz}$			1.0	pF
Storage Time	t_{st}	$I_C = 1.0\text{mA}$, $I_E = 1.0\text{mA}$			200	ns
Fall Time	t_f	$I_C = 1.0\text{mA}$, $I_E = 1.0\text{mA}$			10	ns
Input Time	t_i	$I_C = 1.0\text{mA}$, $I_E = 1.0\text{mA}$			10	ns
Rise Time	t_r	$I_C = 1.0\text{mA}$, $I_E = 1.0\text{mA}$			10	ns
Input Capacitance	C_{ib}	$I_C = 1.0\text{mA}$, $f = 1.0\text{MHz}$			1.0	pF

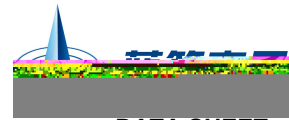


Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector to Emitter Open Voltage	V_{CE}	-10 V	-0			
Collector to Emitter Open Voltage	V_{CE}	-1.0 mV	-0			
Emitter to Collector Open Voltage	V_{EC}	-10 V	-0			
Collector Turn-Off Current	I_C	-0 A			-0.0	
Emitter Turn-Off Current	I_E	-0 A			-0.0	
Current Gain	h_{FE1}	-1.0 A	-10 mV	100	00	
	h_{FE2}	-0 A	-100 mV	0		
	h_{FE}	-0 A	-0 mV	0		
	h_{FE}	-1.0 A	-1.0 mV	0		
	h_{FE}	-0 A	-0.1 mV	0		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-1.0 mV	-1.0 mV		-0.2	

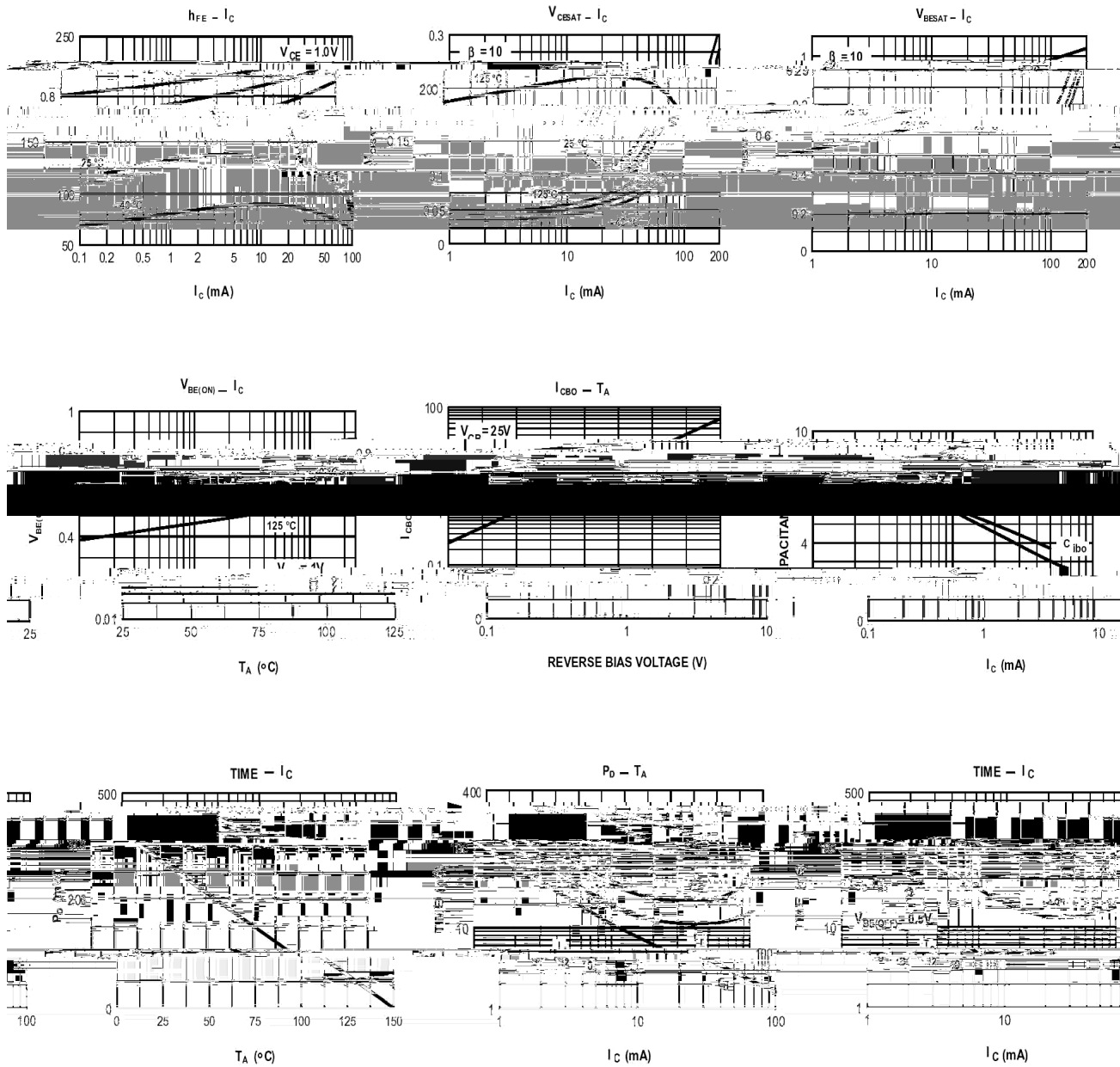


/ Electrical Characteristic Curve (NPN)

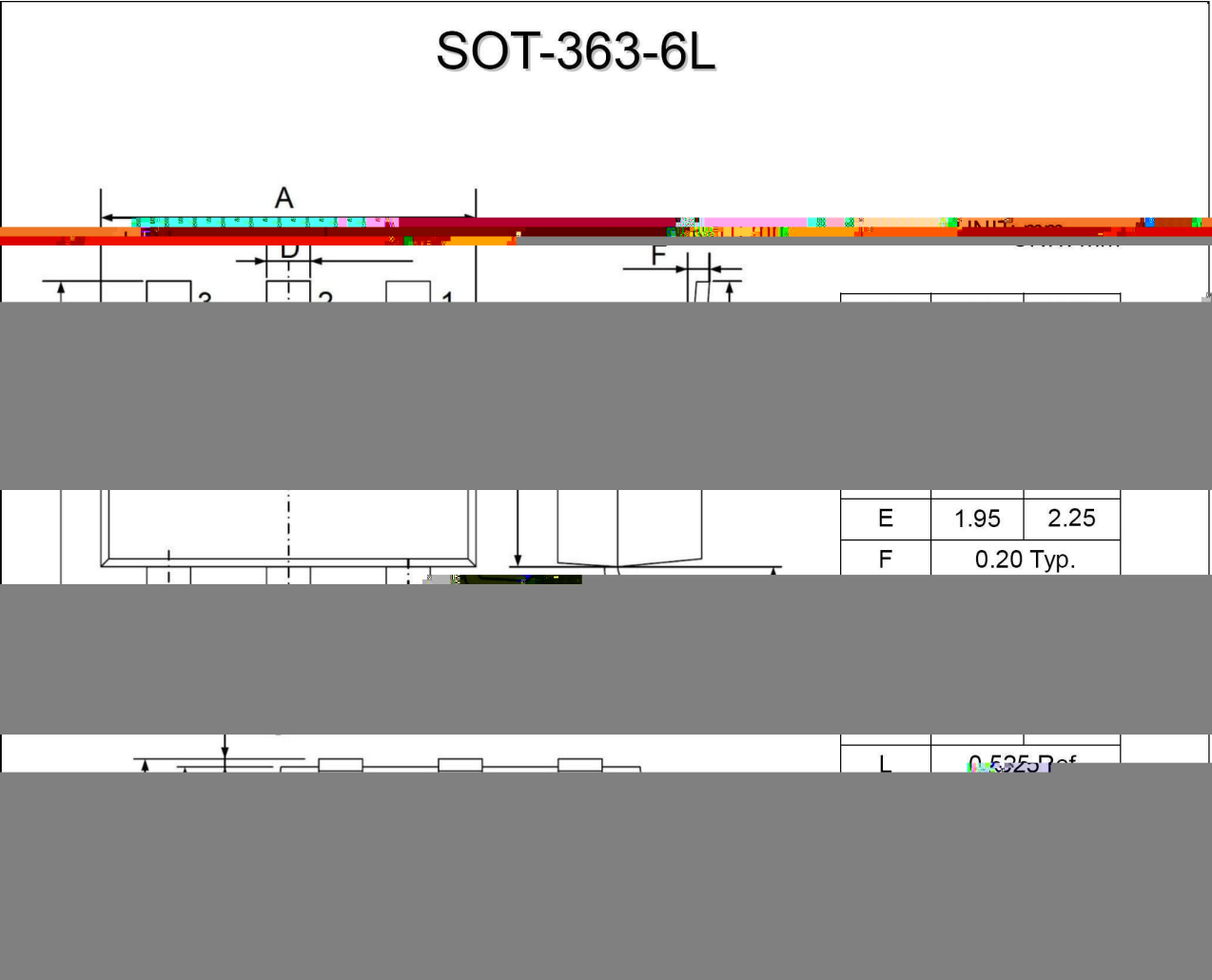




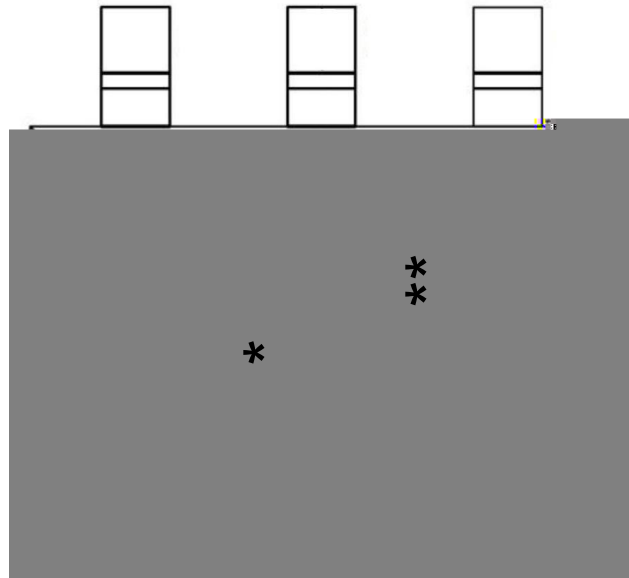
Electrical Characteristic Curve (PNP)



/ Package Dimensions



/ Marking Instructions



● 1

46

***:

Not :

● "1" Pin

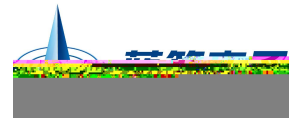
46

Product p o

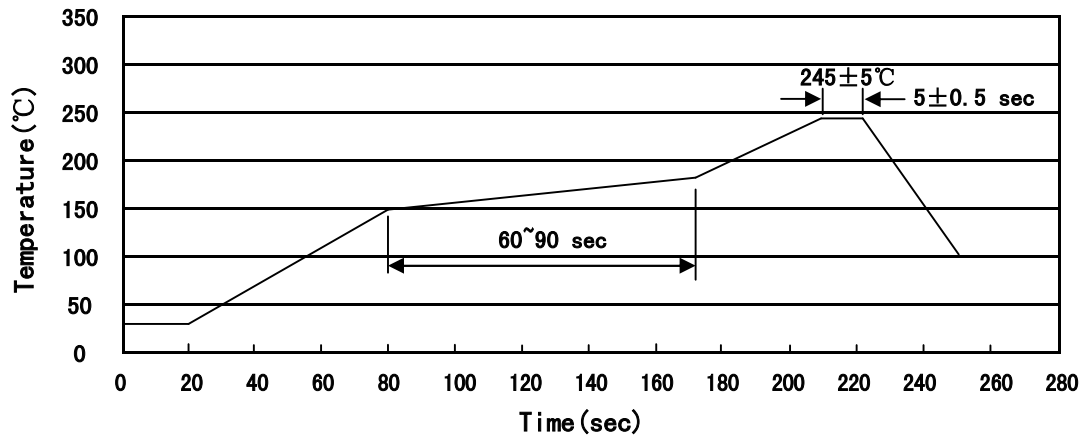
***:

lot No. o co ch n with ot No.

O



() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Not :

- 1 1 0 1 0 0 0s c 1.Pr h tin :1 0 1 0 im : 0 0s c.
- 2 2 ± ±0. s c 2.P mp.:2 ± r tion: ±0. s c.
- 2 10 /s c. . oolin Sp :2 10 /s c.

/ Resistance to Soldering Heat Test Conditions

2 0± 10±1 s c. O O mp.:2 0 °C im :10 1 s c

/ Packaging SPEC.

/ REE

P c p 封装形式	nits 包装数量					im nsion 包装尺寸		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-363	3,000	10	30,000	6	180,000	7" x8	180×120×180	390×385×205

/ Notices