

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

MPS2501L-1-X

产品手册

描述

MPS2501L-1-X 是可控制的光电耦合器件，电路之间的信号传输，使之前端与负载完全隔离，目的在于增加安全性，减小电路干扰，减化电路设计。

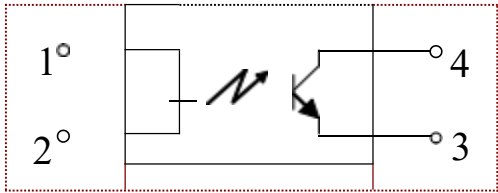
特性

- 电流转换比 (CTR)范围: 80~600% ($I_F=5mA, V_{CE}=5V$)
- 输入-输出隔离电压 ($V_{iso}=5000\text{ Vrms}$)
- 集电极-发射极击穿电压 $BV_{CEO}\geq 80V$

应用领域

- 开关电源，智能电表
- 工业控制，测量仪器
- 办公设备， 比如复印机
- 家用电器， 比如空调、风扇、热水器等

封装信息及内部引脚配置

封装	引脚配置
	
SMD-4P	

订单信息

型号	封装	最小包装
MPS2501L-1-X	SMD-4P	2000

极限参数 (Ta=25℃)

参数		符号	额定值	单位
输入	正向电流	I _F	50	mA
	反向电压	V _R	6	V
	功耗	P	70	mW
输出	集电极功耗	P _C	150	mW
	集电极电流	I _C	50	mA
	集电极-发射极电压	V _{CEO}	80	V
	发射极-集电极电压	V _{ECO}	7	V
总功耗		P _{tot}	200	mW
隔离电压		V _{iso}	5000	V _{rms}
工作温度		T _{opr}	-55~+110	° C
储存温度		T _{stg}	-55~+125	° C
焊接温度		T _{sol}	260	° C

CTR 分级表

型号	管体标记	分级标准	电流转换率(%) (I _c /I _F)	
			IF = 5mA, VCE = 5V, Ta = 25℃	
			Min	Max
MPS2501L-1-K		K	300	600
MPS2501L-1-L		L	200	400
MPS2501L-1-M		M	80	240
MPS2501L-1-D		D	100	300
MPS2501L-1-H		H	80	160
MPS2501L-1-W		W	130	260
MPS2501L-1-Q		Q	100	200
MPS2501L-1-N		N	80	600

光电特性 Ta=25℃

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
输入	正向电压	V_F	$I_F=20\text{mA}$		1.2	1.4	V
	反向电流	I_R	$V_R=5\text{V}$	-	-	10	μA
	终端电容	C_t	$V=0, f=1\text{kHz}$	-	30	250	pF
输出	集电极暗电流	I_{CEO}	$V_{CE}=70\text{V}$	-	-	100	nA
	集电极-发射极击穿电压	BV_{CEO}	$I_C=0.1\text{mA}, I_F=0$	80	-	-	V
	发射极-集电极击穿电压	BV_{ECO}	$I_E=0.1\text{mA}, I_F=0$	7	-	-	V
传输特性	电流转换比	CTR	$I_F=5\text{mA}, V_{CE}=5\text{V}$	80	-	600	%
	饱和压降	$V_{CE(sat)}$	$I_F=20\text{mA}, I_C=1\text{mA}$	-	0.1	0.2	V
	集电极-发射极饱和压降	R_{ISO}	DC1000V, 40~60%R.H.	1×10^{11}	-	-	Ω
	隔离电容	C_f	$V=0, f=1\text{MHz}$	-	0.6	1.0	pF
	截止频率	F_c	$V_{CE}=5\text{V}, I_C=2\text{mA},$	-	80	-	kHz
开关时间	上升时间	T_r	$V_{CE}=10\text{V}, I_C=2\text{mA},$ $R_L=100\Omega$	-	4	18	μs
	下降时间	T_f		-	3	18	μs

* $CTR=I_C/I_F \times 100\%$

图.1 测试电路

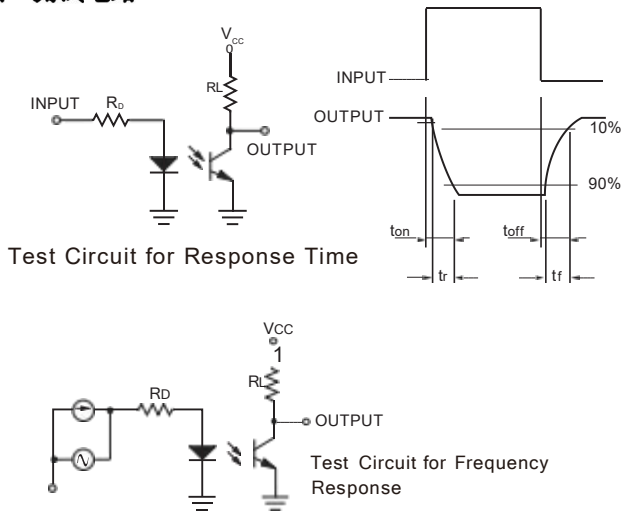


图.3 正向电流 vs. 正向电压曲线图

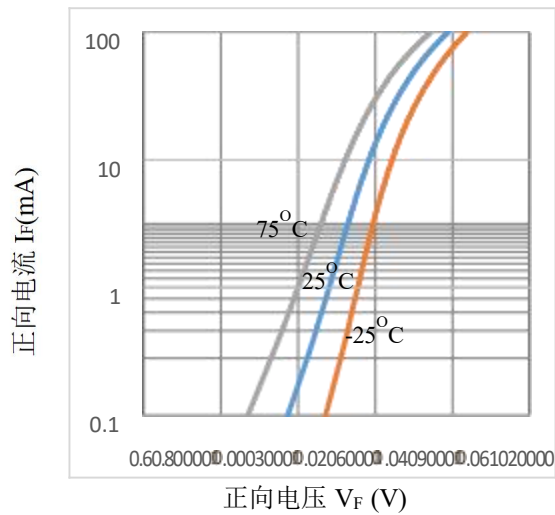


图.2 电流转换比 vs. 正向电流曲线图

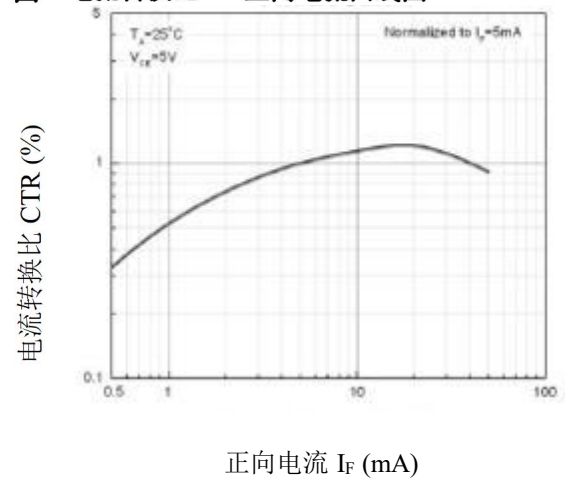


图.4 集电极电流 vs. 集-发电压曲线图

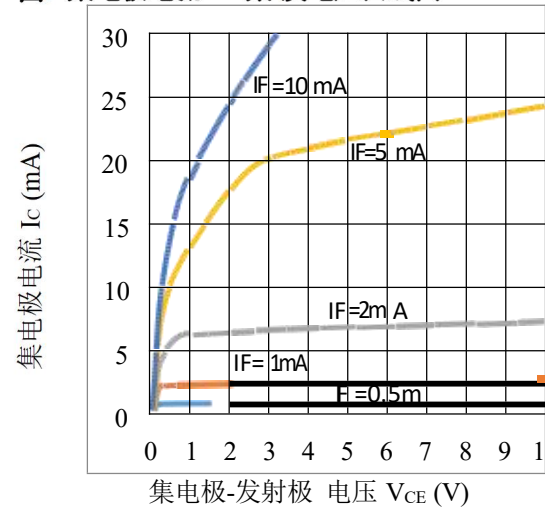


图5 相对电流转换比 vs. 环境温度曲线图

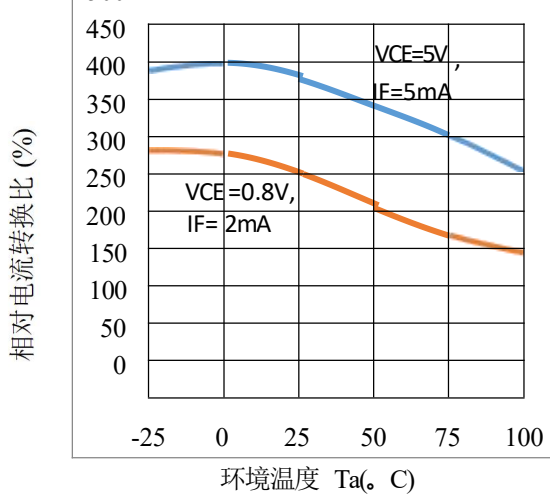


图6 饱和压降 vs. 环境温度曲线图

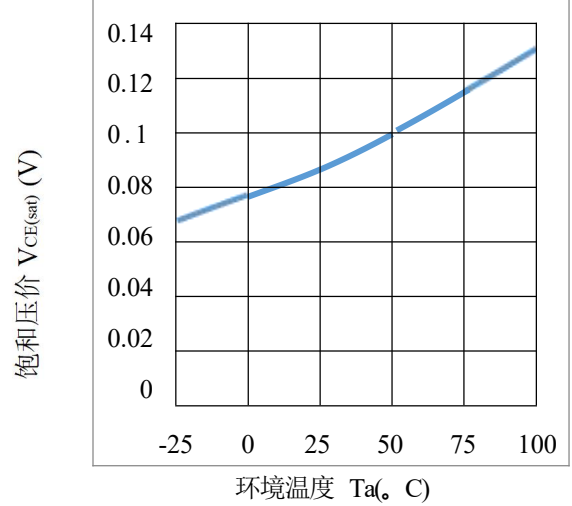


图7 集电极暗电流 vs. 环境温度曲线图

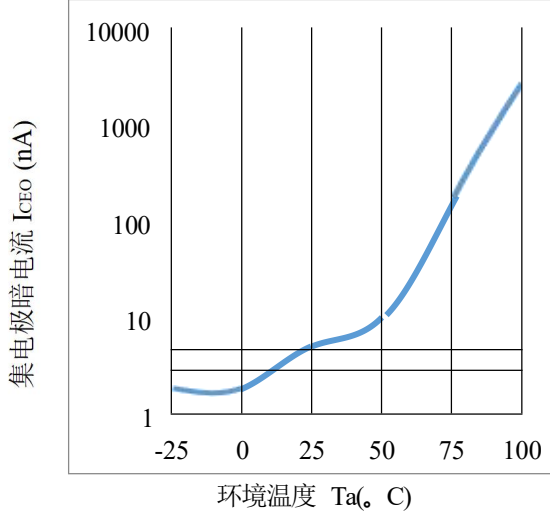


图8 响应时间 vs. 负载电阻曲线图

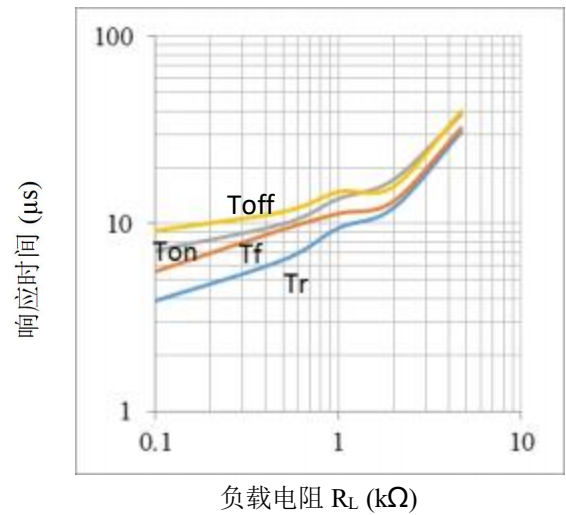


图9 频率响应曲线图

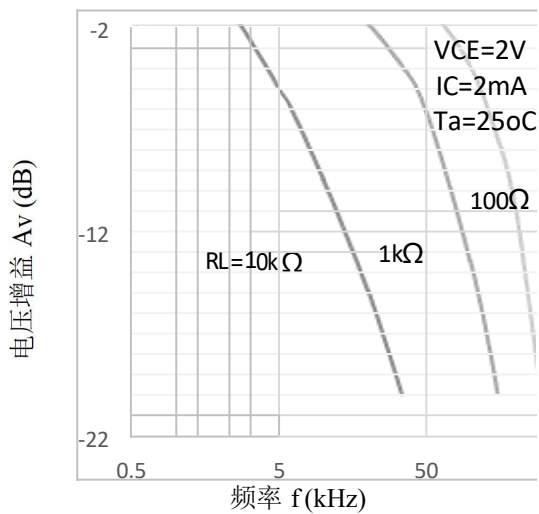
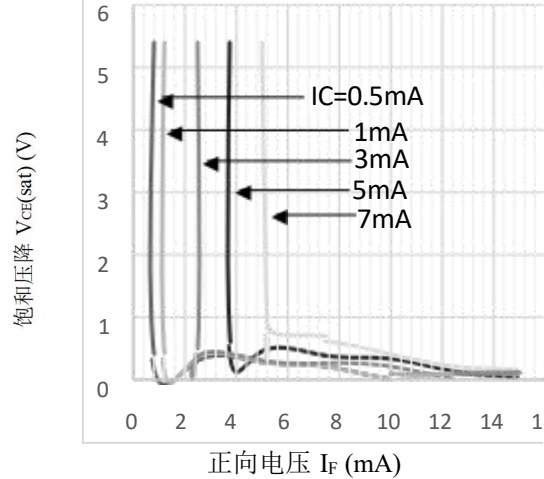
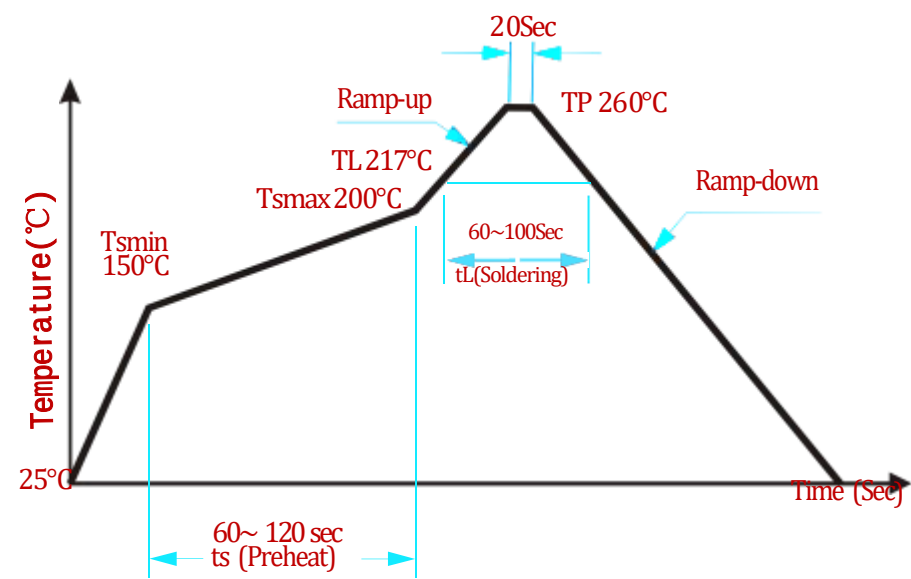


图10 饱和压降 vs. 正向电压曲线图

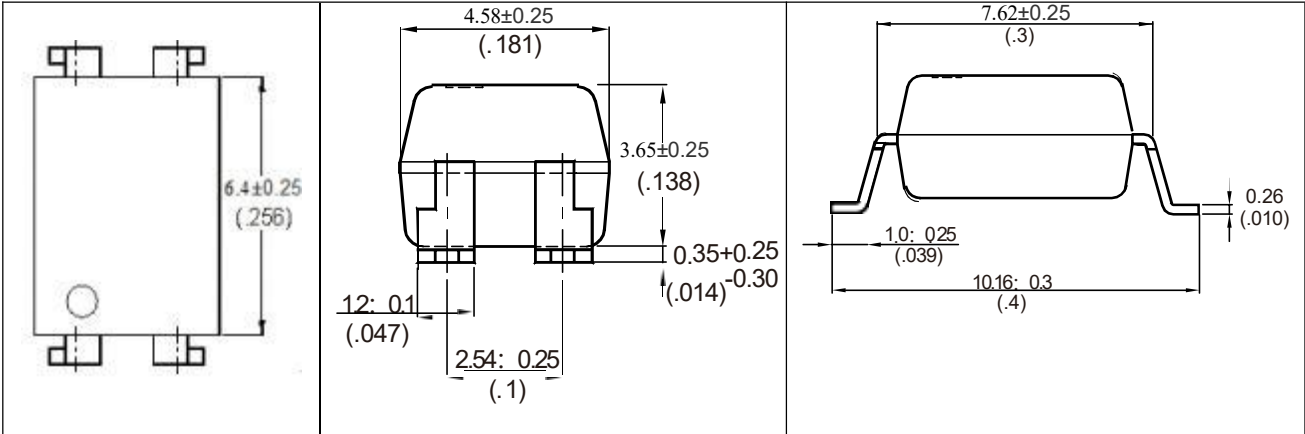


回流焊温度曲线图



外形尺寸

Unit: mm (inch)



SMD-4P

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