

MSKSEMI 美森科

SEMICONDUCTOR



ESD



TVS



TSS



MOV



GDT



PLED

MPC357X

产品手册

描述

MPC357X 是一块小外形的贴片光电耦合器件, 适合表面贴装生产。MPC357X 是由一个砷化镓发光二极管和一个光电晶体管组成的光电耦合器, 它的体积比 DIP 小, 适用于高密度表面贴装应用, 如可编程控制器等。

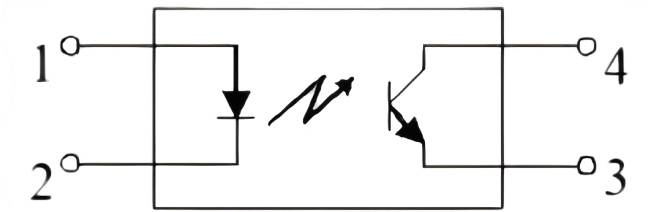
特性

- 电流转换比 (CTR)范围: 50~600% ($I_F = 5mA, V_{CE} = 5V$)
- 输入-输出隔离电压 ($V_{iso}=3750\text{ Vrms}$)
- 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
 SOP-4	

订单信息

型号	封装	最小包装
MPC357X	SOP-4	3000

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
	正向脉冲电流	I _{FP}	1	A
	反向电压	V _R	6	V
	功耗	P	70	mW
	结温	T _j	125	℃
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 _{CE0}	80	V
	发射极-集电极电压	V _{ECO}	7	V
	结温	T _j	125	℃
总功耗		P _{tot}	200	mW
隔离电压		V _{iso}	3750	V _{rms}
工作温度		T _{opr}	-55~+110	℃
储存温度		T _{stg}	-55~+125	℃
焊接温度		T _{sol}	260	℃

CTR 分级表

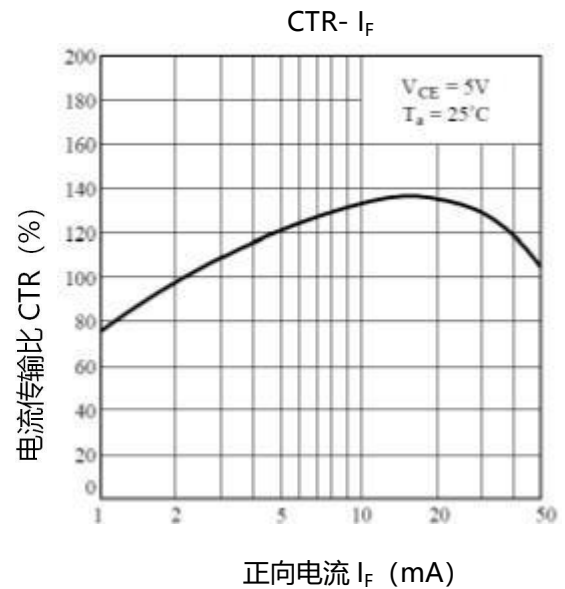
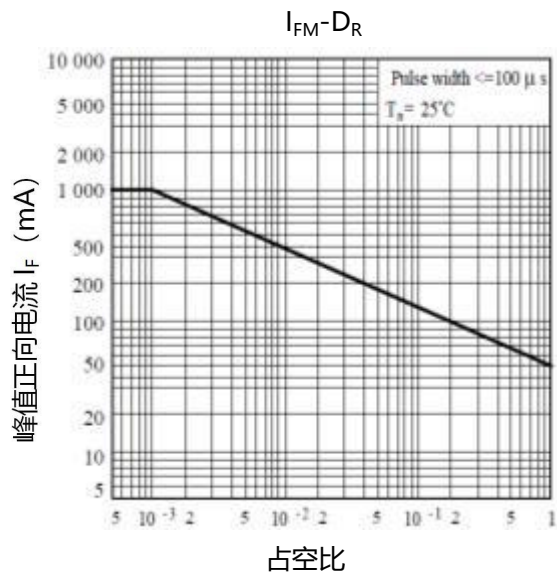
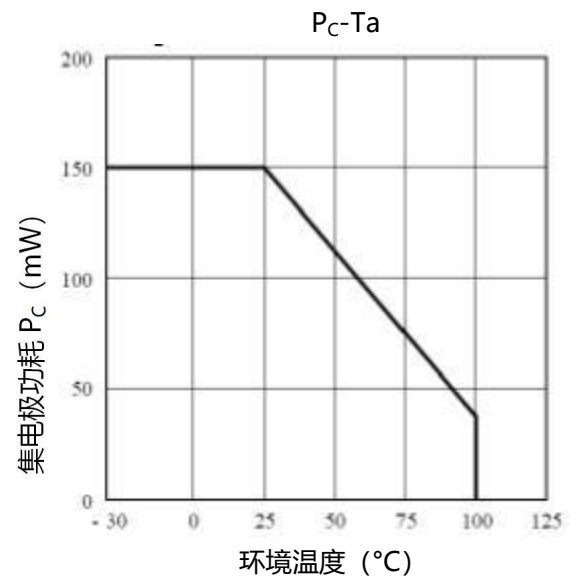
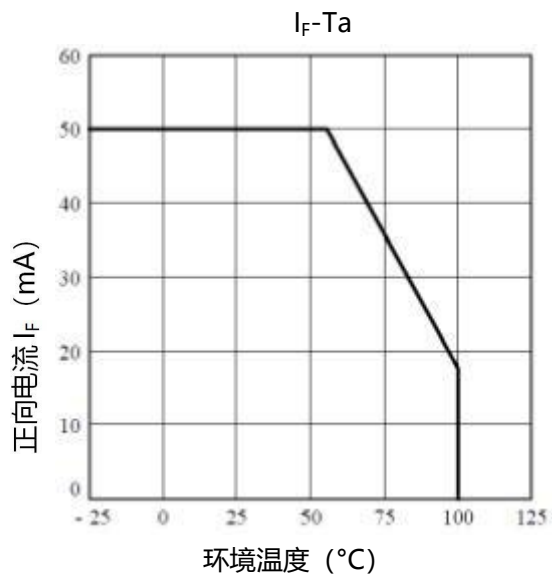
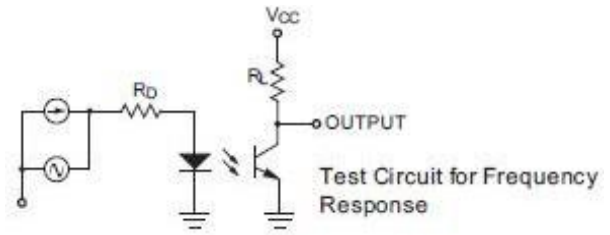
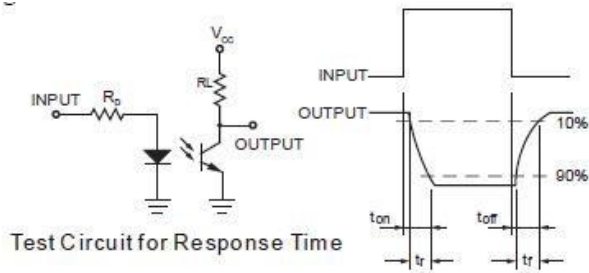
型号	管体标记	分级标准	I _c (mA)		对应CTR (%)	
			I _F = 5mA, V _{CE} = 5V, Ta = 25℃		I _F = 5mA, V _{CE} = 5V, Ta = 25℃	
			Min	Max	Min	Max
MPC357		Blank	2.5	30.0	50	600
MPC357A		A	4.0	8.0	80	160
MPC357B		B	6.5	13.0	130	260
MPC357C		C	10.0	20.0	200	400
MPC357D		D	15.0	30.0	300	600

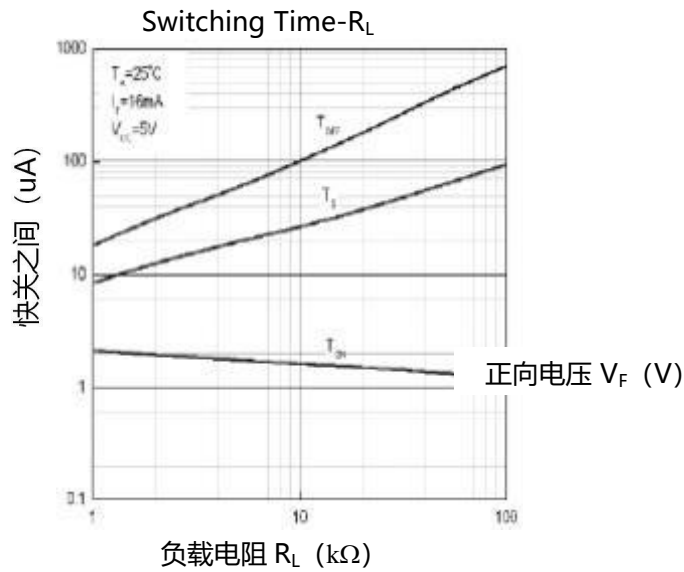
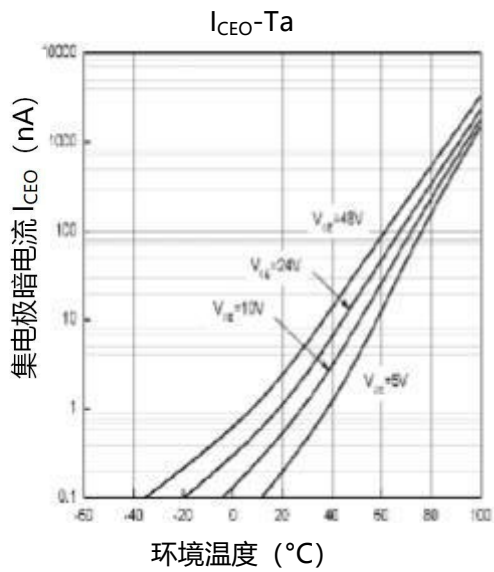
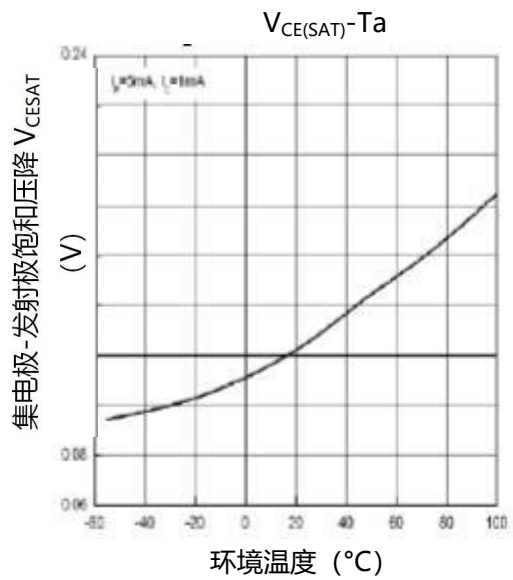
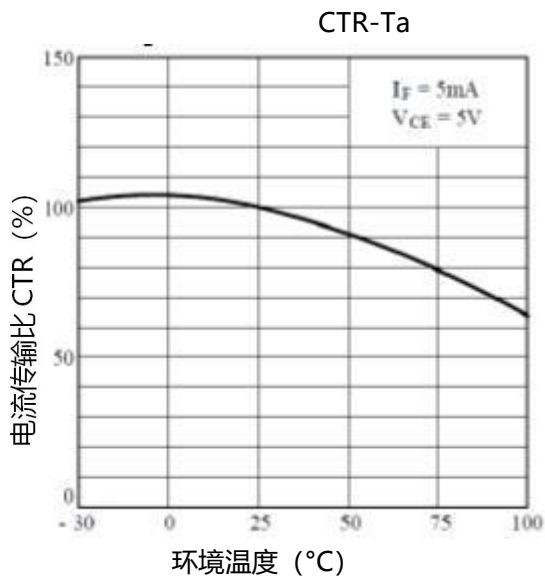
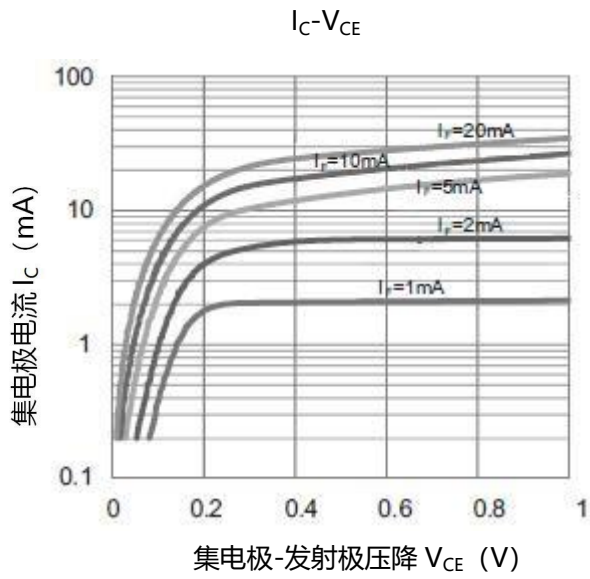
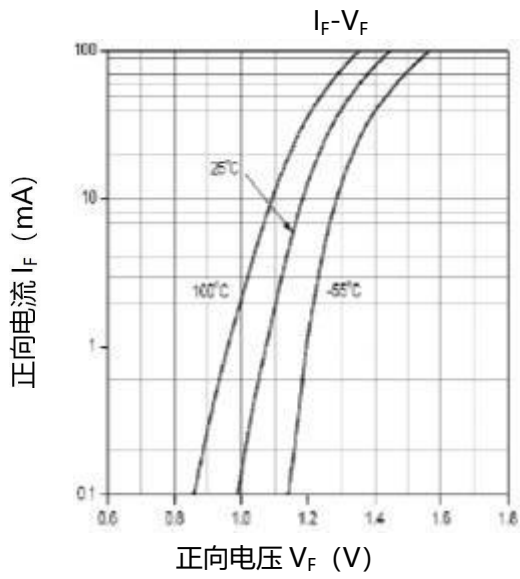
光电特性 (Ta=25℃)

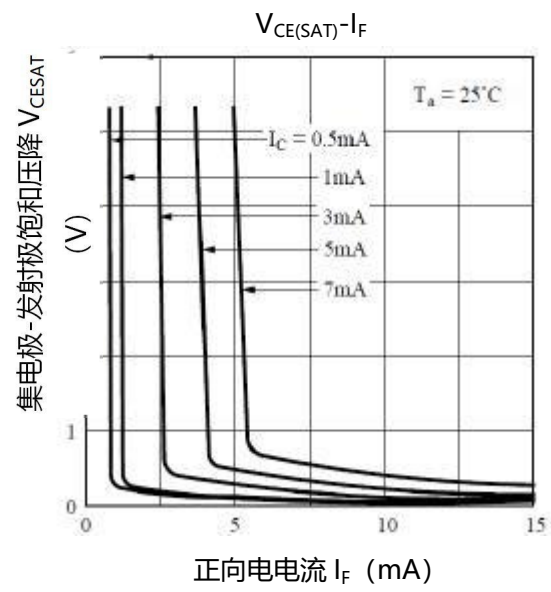
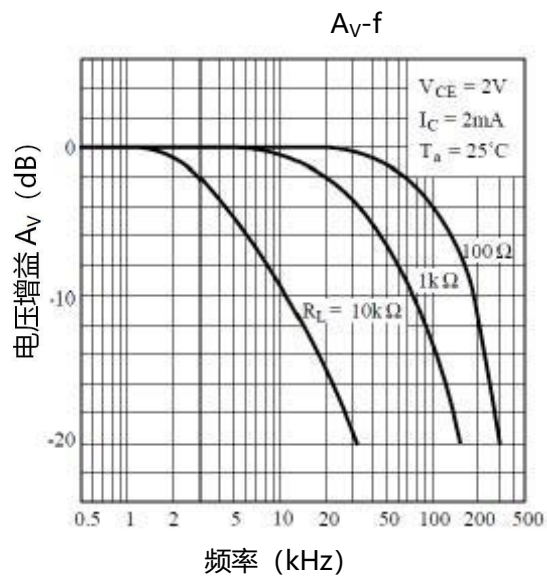
Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
输入	正向电压	V _F	I _F =20mA		1.2	1.4	V
	反向电流	I _R	V _R =5V	-	-	10	μA
	终端电容	C _t	V=0, f= 1kHz	-	30	250	pF
输出	集电极暗电流	I _{CEO}	V _{CE} =70V	-	-	100	nA
	集电极-发射极击穿电压	BV _{CEO}	I _C =0.1mA, I _F =0	80	-	-	V
	发射极-集电极击穿电压	BV _{ECO}	I _E =0.1mA, I _F =0	7	-	-	V
传输特性	电流转换比	CTR	I _F =5mA, V _{CE} =5V	50	-	400	%
	集电极-发射极饱和压降	V _{CE(sat)}	I _F =20mA, I _C = 1mA	-	0.1	0.2	V
	隔离电阻	R _{ISO}	DC1000V, 40~60%R.H.	1x10 ¹¹	-	-	Ω
	隔离电容	C _f	V=0, f= 1MHz	-	0.6	1.0	pF
	集电极-发射极电容	C _{CCE}	V=0, f= 1MHz		10		pF
	截止频率	F _c	V _{CE} =5V, I _C =2mA, R _L = 100Ω, -3dB	-	80	-	kHz
开关时间	上升时间	Tr	V _{CE} = 10V, I _C =2mA, R _L = 100Ω	-	4	18	μs
	下降时间	Tf		-	3	18	μs

* CTR=I_C/I_F x 100%

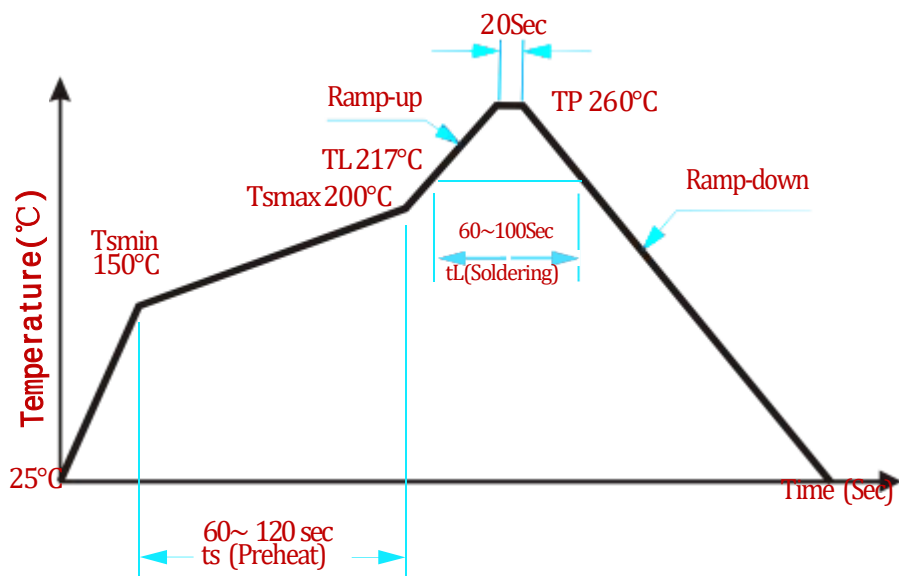
测试电路



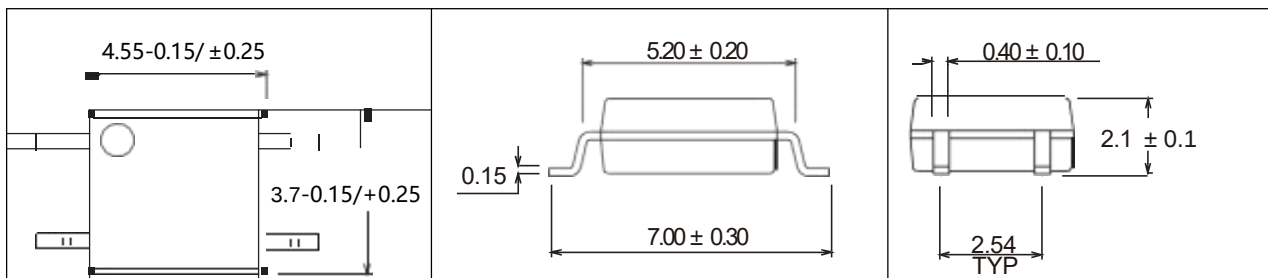




回流焊温度曲线图



外形尺寸



Attention

■ Any and all MSKSEMI Semiconductor products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your MSKSEMI Semiconductor representative nearest you before using any MSKSEMI Semiconductor products described or contained herein in such applications.

■ MSKSEMI Semiconductor assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specification of any and all MSKSEMI Semiconductor products described or contained herein.

■ Specifications of any and all MSKSEMI Semiconductor products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.

■ MSKSEMI Semiconductor strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.

■ In the event that any or all MSKSEMI Semiconductor products (including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.

■ No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of MSKSEMI Semiconductor.

■ Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. MSKSEMI Semiconductor believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringement of intellectual property rights or other rights of third parties.

■ Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the MSKSEMI Semiconductor product that you intend to use.