

Features

- High isolation 3750 VRMS
- CTR flexibility available see order information
- DC input with transistor output
- Operating temperature range - 55 °C to 110 °C
- ROHS、REACH compliance
- Halogen free
- MSL class 1
- Regulatory Approvals
 - UL - UL1577
 - VDE - EN60747-5-5(VDE0884-5)
 - CQC - GB4943.1

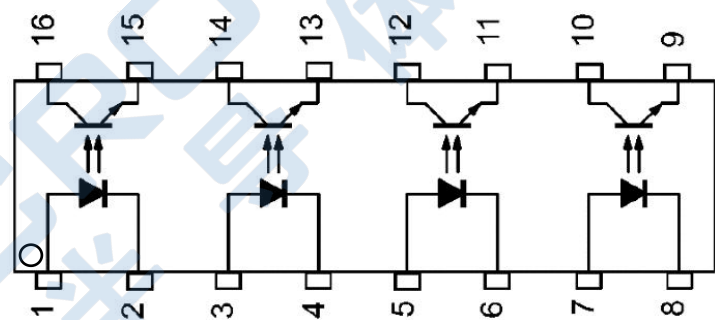
Applications

- Switch mode power supplies
- Programmable controllers
- Household appliances
- Office equipment

Description

The IS281-4 series combine an AlGaAs infrared emitting diode as the emitter which is optically coupled to a silicon planar phototransistor detector in a plastic SO16 package with different lead forming options.

With the robust coplanar double mold structure, IS281-4 series provide the most stable isolation feature.



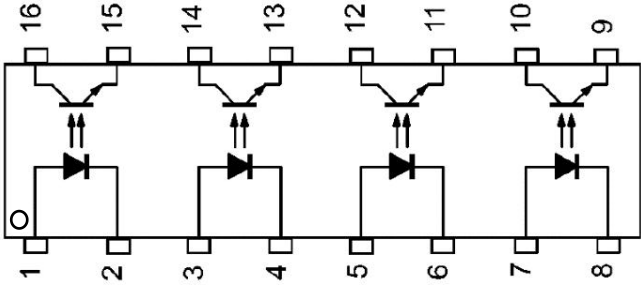
ORDERING INFORMATION

Outline	Part Number	Package	Marking	Packing	Packing Size	Quantity
	IS281-4	SSOP16	IS281-4 /YYWW B	Reel	13 "	2000

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PIN CONFIGURATION AND FUNCTIONS

	Pin	Name
	1、3、5、7	Anode
	2、4、6、8	Cathode
	9、11、13、15	Emitter
	10、12、14、16	Collector

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	Note
INPUT				
Forward Current	I_F	50	mA	
Peak Forward Current	I_{FP}	1	A	1
Reverse Voltage	V_R	6	V	
Input Power Dissipation	P_D	70	mW	
OUTPUT				
Collector - Emitter Voltage	V_{CEO}	80	V	
Emitter - Collector Voltage	V_{ECO}	7	V	
Collector Current	I_C	50	mA	
Output Power Dissipation	P_O	150	mW	
COMMON				
Total Power Dissipation	P_{tot}	200	mW	
Isolation Voltage	V_{iso}	3750	Vrms	2
Operating Temperature	T_{opr}	-55~110	°C	
Storage Temperature	T_{stg}	-55~125	°C	
Soldering Temperature	T_{sol}	260	°C	

Note 1. 100μs pulse, 100Hz frequency
Note 2. AC For 1 Minute, R.H. = 40 ~ 60%

ELECTRICAL OPTICAL CHARACTERISTICS($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Min	Typ.	Max.	Unit	Test Condition	Note
INPUT							
Forward Voltage	V_F	-	1.2	1.6	V	$I_F=10\text{mA}$	
Reverse Current	I_R	-	-	10	μA	$V_R=6\text{V}$	
Input Capacitance	C_{in}	-	30	250	pF	$V=0, f=1\text{kHz}$	
OUTPUT							
Collector Dark Current	I_{CEO}	-	-	100	nA	$V_{CE}=20\text{V}, I_F=0$	
Collector-Emitter Breakdown Voltage	BV_{CEO}	80	-	-	V	$I_C=0.1\text{mA}, I_F=0$	
Emitter-Collector Breakdown Voltage	BV_{ECO}	7	-	-	V	$I_E=0.1\text{mA}, I_F=0$	
TRANSFER CHARACTERISTICS							
Current Transfer Ratio	CTR	50	-	600	%	$I_F=5\text{mA}, V_{CE}=5\text{V}$	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	0.1	0.2	V	$I_F=10\text{mA}, I_C=1\text{mA}$	
Isolation Resistance	R_{ISO}	5×10^{10}	1×10^{11}	-	Ω	DC500V, 40 ~ 60% R.H.	
Floating Capacitance	C_{IO}	-	0.3	1	pF	$V=0, f=1\text{MHz}$	
Response Time (Rise)	t_r	-	5	18	μs	$V_{CE}=2\text{V}, I_C=2\text{mA}$ $R_L=100\Omega$	
Response Time (Fall)	t_f	-	3	18	μs		

CHARACTERISTIC CURVES

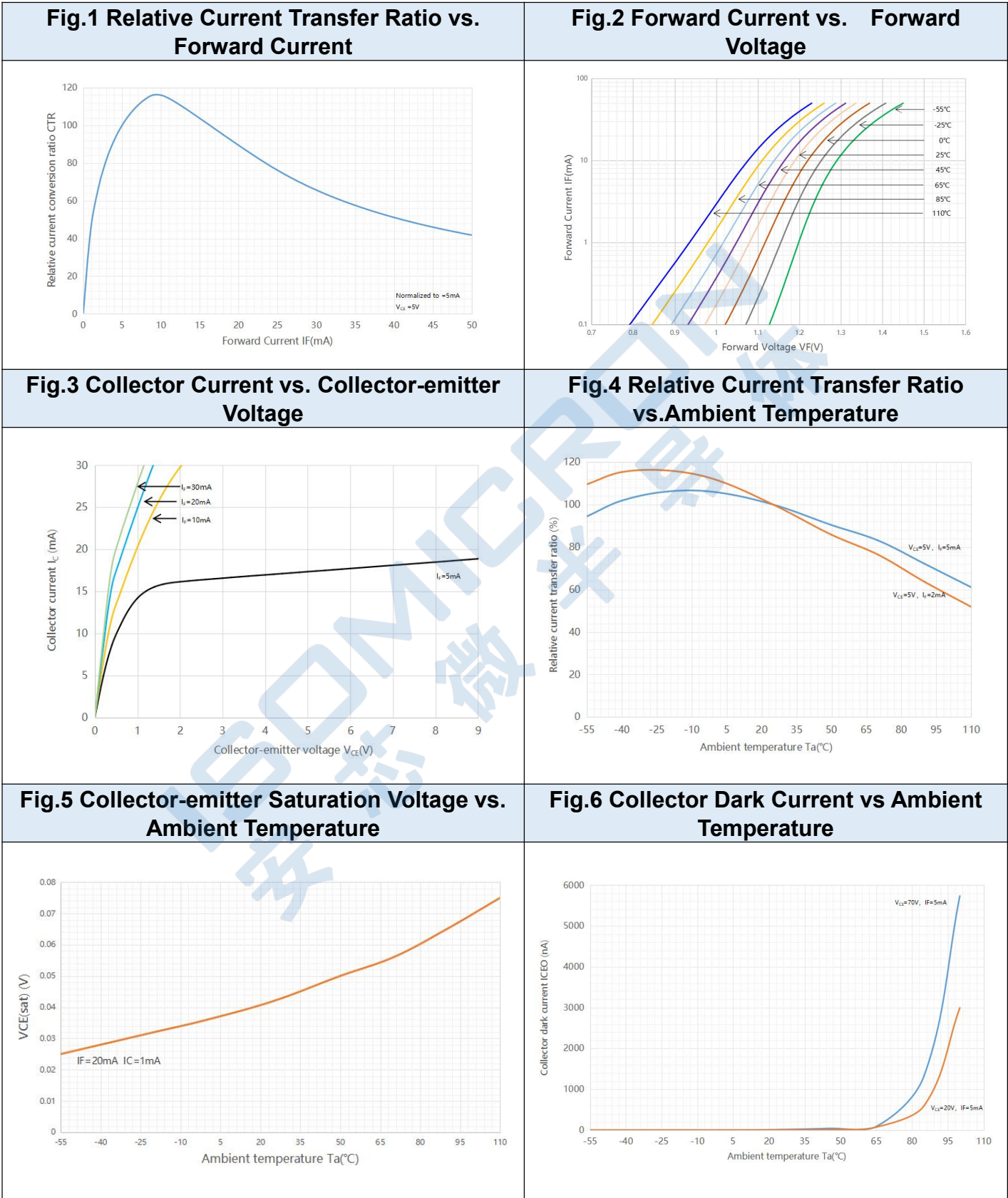


Fig.7 Response Time vs. Load Resistance

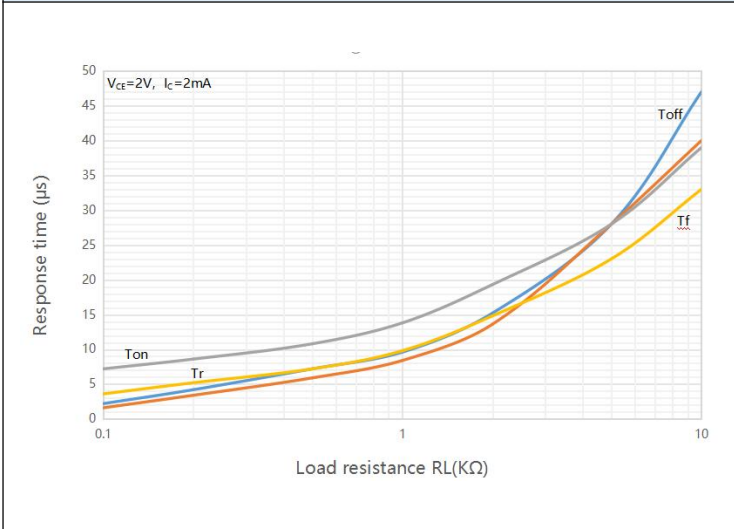


Fig.8 Frequency Response

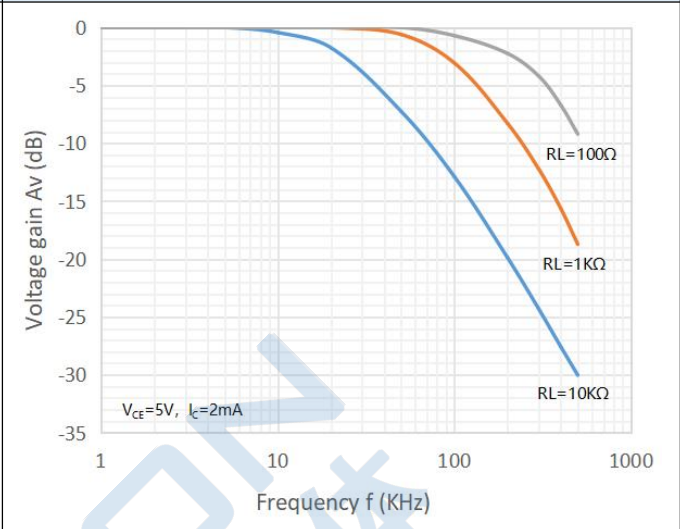
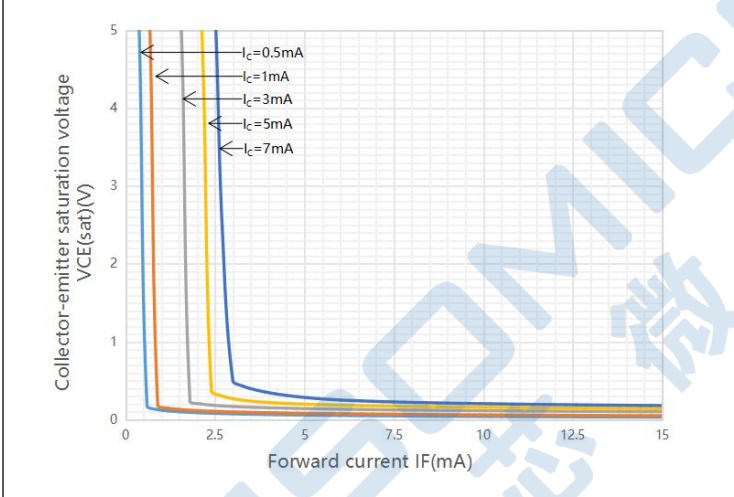
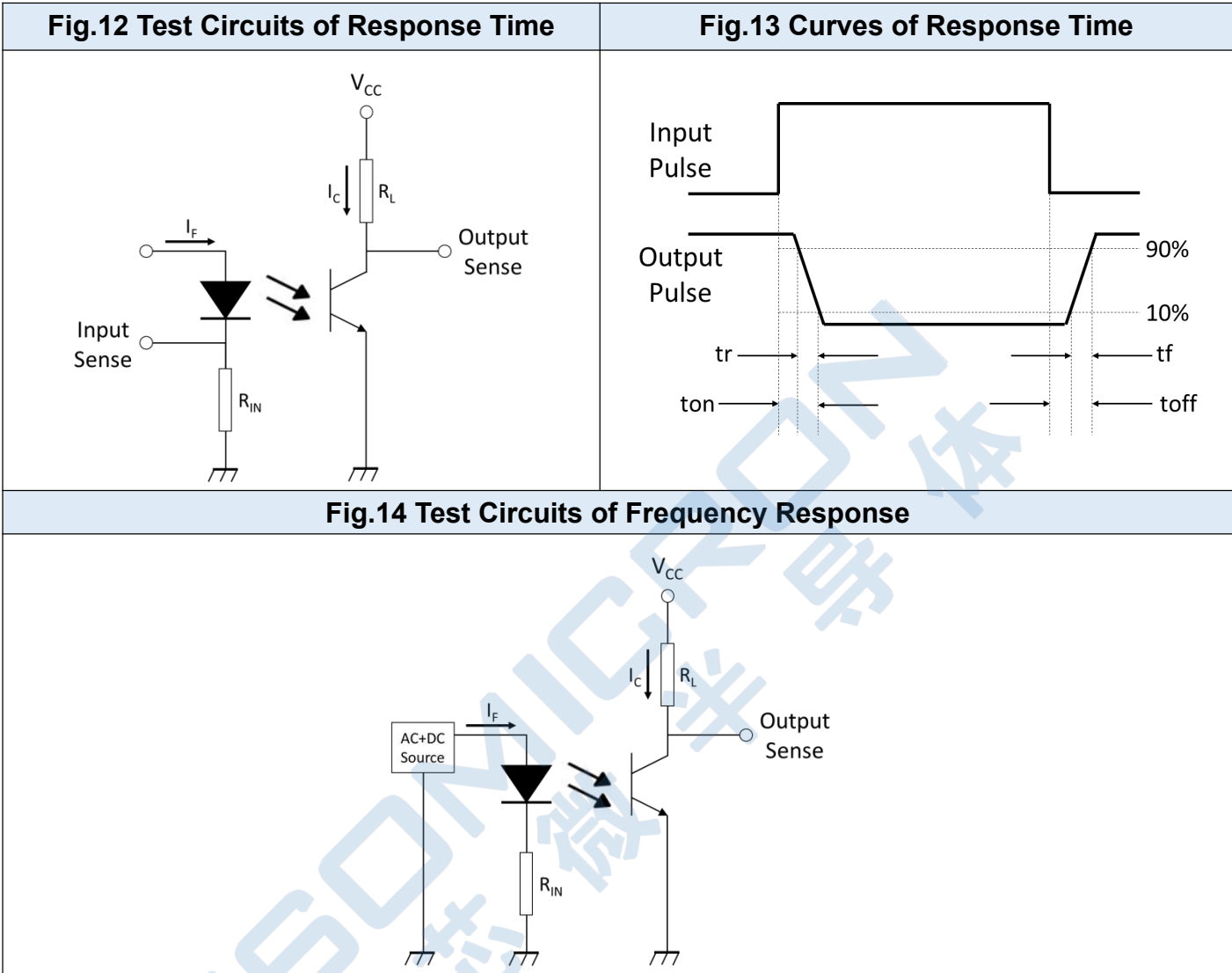


Fig.9 Collector-emitter Saturation Voltage vs Forward Current

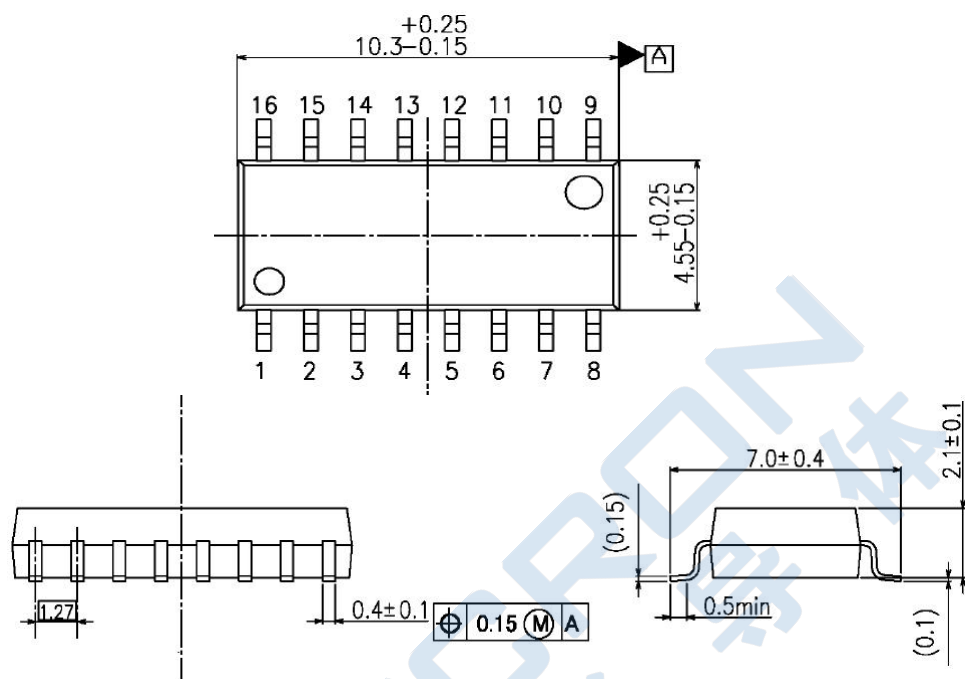


TEST CIRCUITS

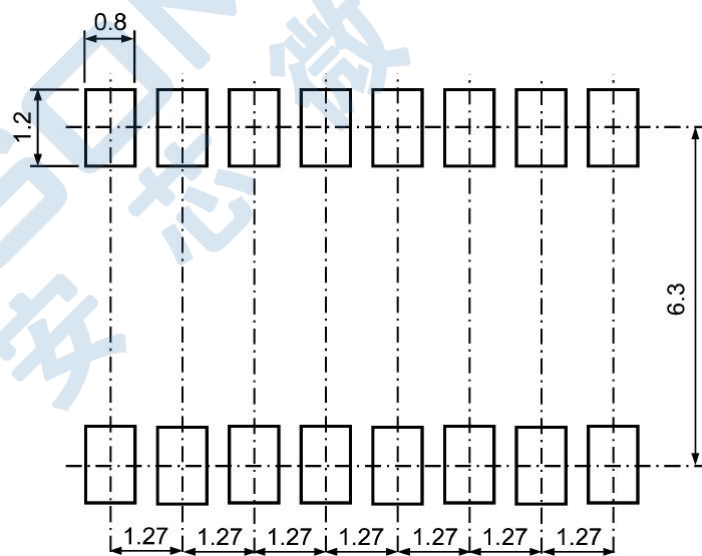


PACKAGE DIMENSIONS

Surface Mount (Low Profile) - (SSOP16)



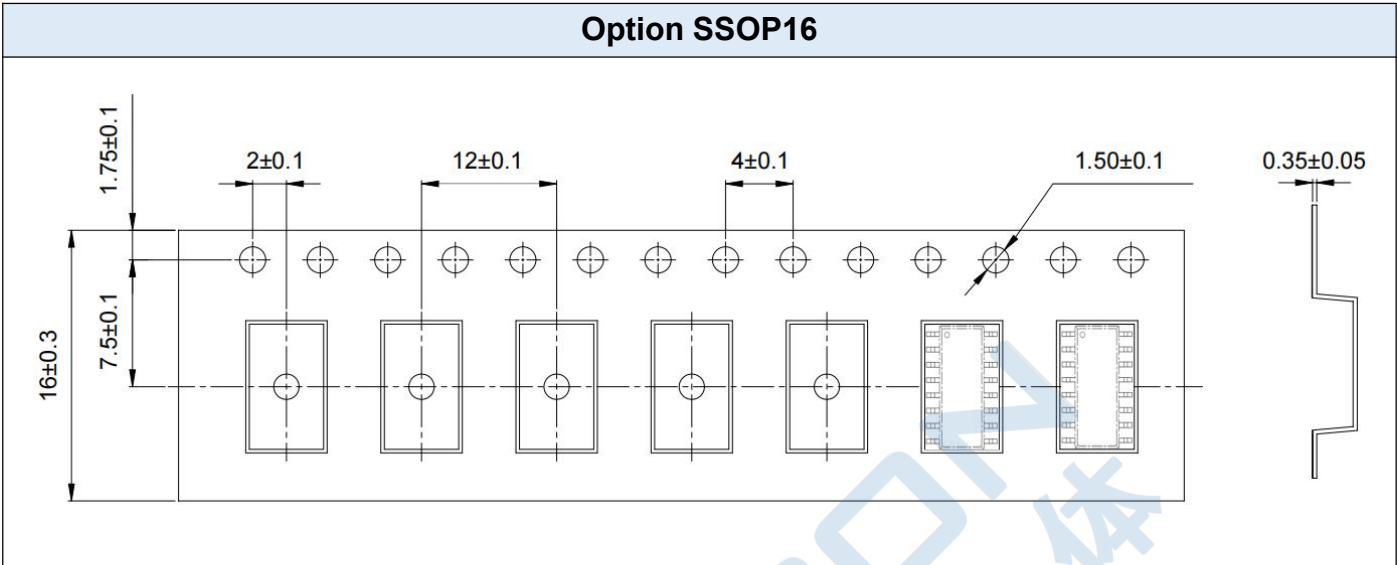
Recommended Solder Mask



- Dimensions in mm unless otherwise stated

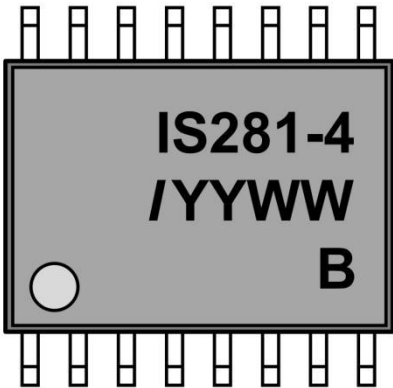
CARRIER TAPE SPECIFICATIONS

Option SSOP16

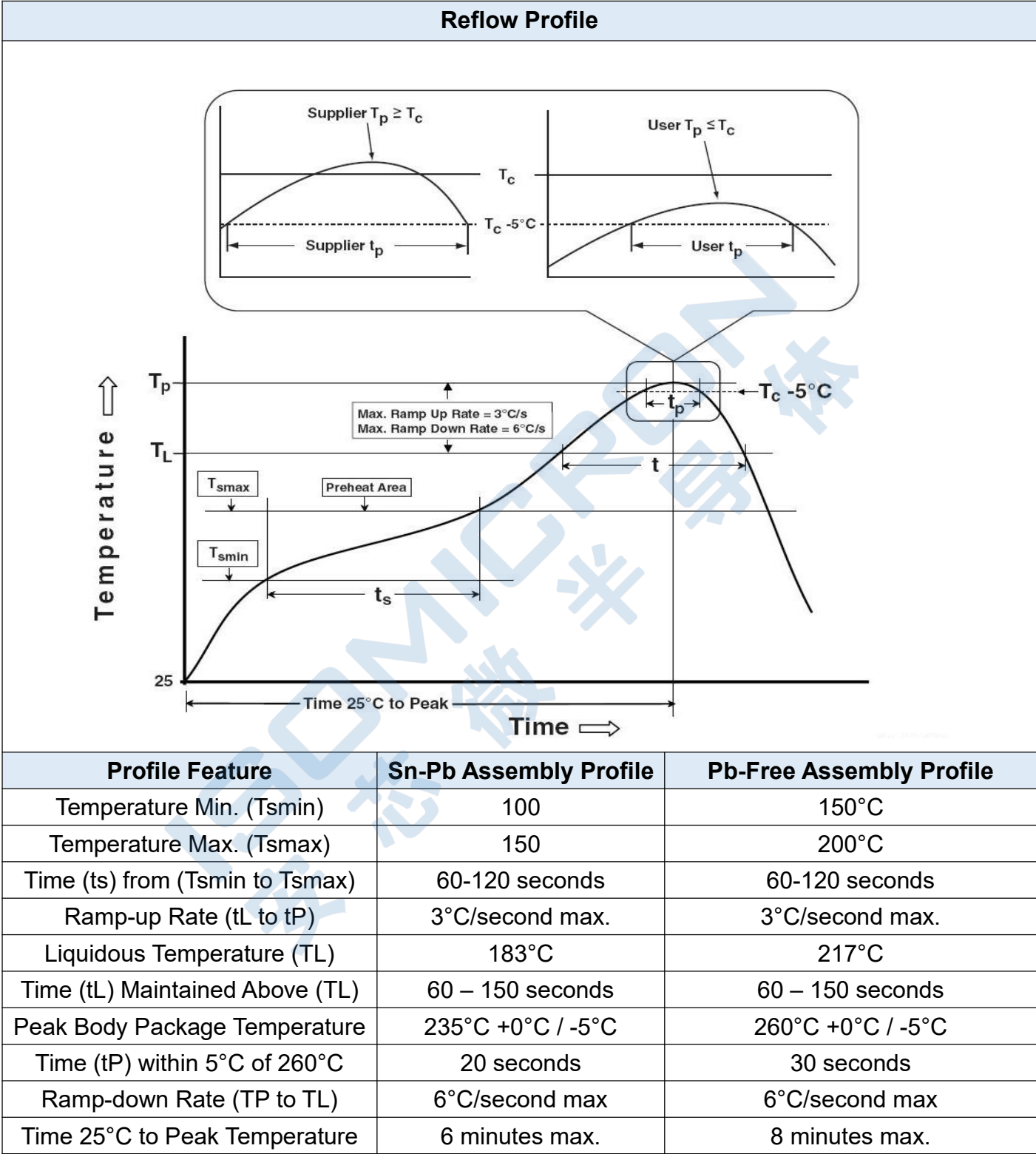


- Dimensions in mm unless otherwise stated

ORDERING AND MARKING INFORMATION

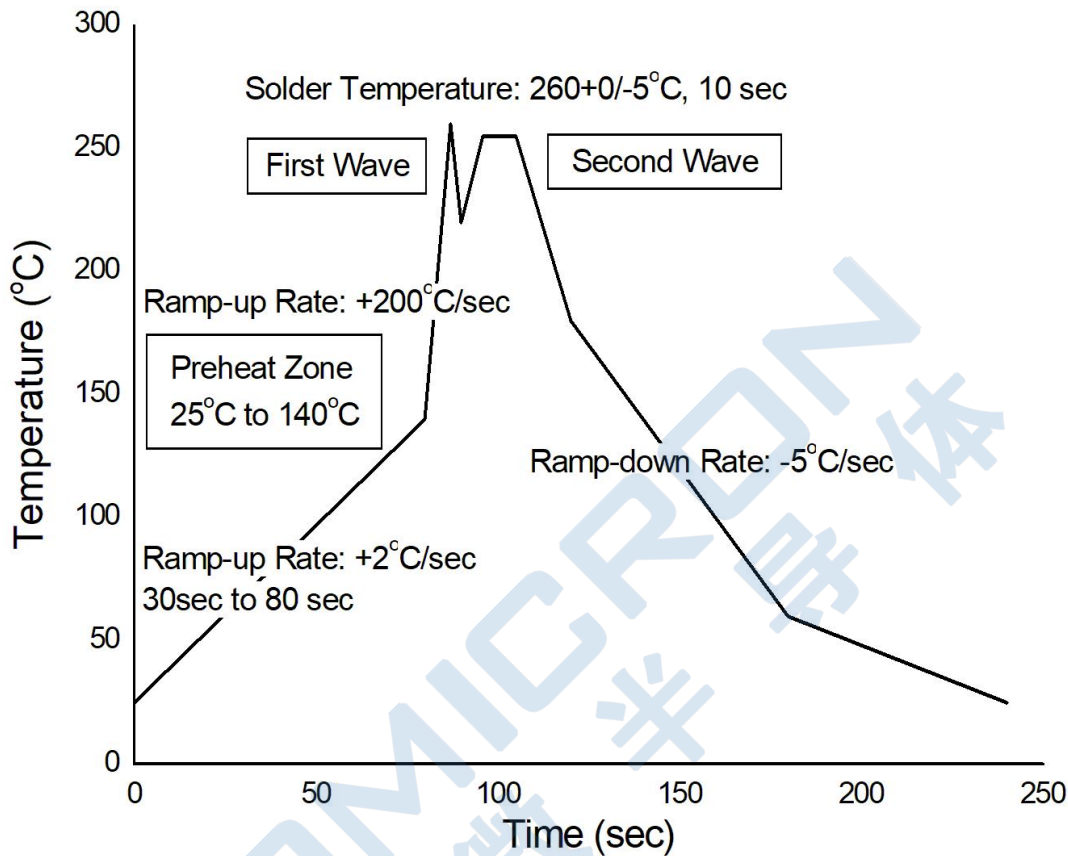
Marking Information			
		IS : Company Abbr. 281-4 : Part Number / : ISOMICRON YY : Fiscal Year WW : Work Week B : Manufacturing Code	
Order Code			
Company Abbr. Part Number		IS 281-4 - X X Halogen Free: E/None: Halogen-free,Lead-free Z: Halogen, Lead-free Performance: N: Enhanced None: Normal	
Packing Quantity			
Option	Quantity	Quantity – Inner box	Quantity – Outer box
SSOP16	2000 Units/Reel	2 Reels/Inner box	5 Inner box/Outer box = 20k Units

REFLOW INFORMATION



TEMPERATURE PROFILE OF SOLDERING

Wave Soldering (JESD22-A111 COMPLIANT)



Hand Soldering By Soldering Iron

Soldering Temperature	380+0/-5°C
Soldering Time	3 sec max.

- One time soldering is recommended for all soldering method.
- Do not solder more than three times for IR reflow soldering.

DISCLAIMER

- ISOMICRON is continually improving the quality, reliability, function and design. ISOMICRON reserves the right to make changes without further notices.
- The characteristic curves shown in this datasheet are representing typical performance which are not guaranteed.
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- This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or lifesaving applications or any other application which can result in human injury or death.
- Please contact ISOMICRON sales agent for special application request.
- Immerge unit's body in solder paste is not recommended.
- Parameters provided in datasheets may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated in each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify ISOMICRON's terms and conditions of purchase, including but not limited to the warranty expressed therein.
- Discoloration might be occurred on the package surface after soldering, reflow or long-time use. It neither impacts the performance nor reliability.