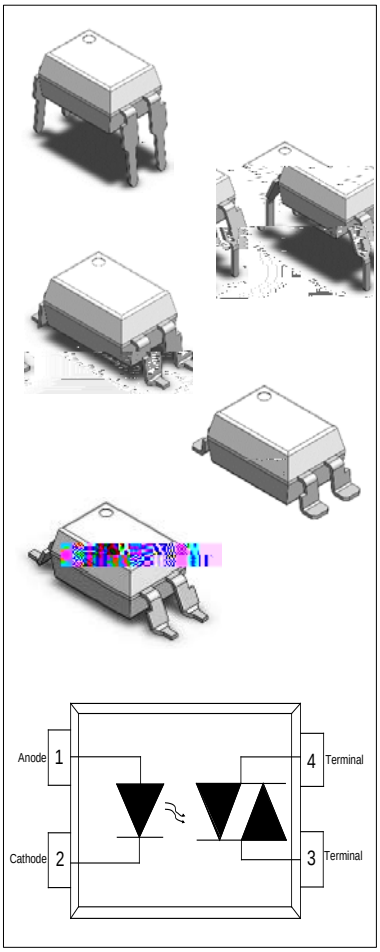
JOC301XD4 Series

Rev.A.1.1

DESCRIPTION:

The JOC301XD4 series combine an AIGaAs infrared emitting diode as the emitter which is optically coupled to a monolithic silicon random-phase photo triac in a plastic DIP4 package with different lead forming options. With the robust coplanar double mold structure, JOC301XD4 series provide the most stable isolation feature. The products are widely used in solenoid/valve controls, lighting controls, motor controls, temperature controls, static AC power switches, solid state relays, interfacing microprocessors up to 120 V_{AC} peripherals.



MAIN FEATURES

High isolation 5000 VRMS
DC input with random-phase photo triac output
Operating temperature range -55 ł wr 433 ł
UHDFK frp s0ldqfh
Kd0r jhq iuhh
HBM: K6D› P P= P7
CQC approved
VDE approved
UL approved

ABSOLUTE MAXIMUM RATINGS (Temperature=25°C)

Parameter		Symbol	Value	Unit
Input	Forward Current	I_F	60	mA
	Reverse Voltage	V_R	6	V
	Junction Temperature	T_j	125	
	Input Power Dissipation	P_I	100	mW
	Power Dissipation Derating (T_a 25)	P_D/	-1.33	mW/
Output	Off-state Output Terminal Voltage	V_{OFF}	250	V
	Peak On−state Current (100μs pulse, 120 pps)	I_{TP}	2	A
	On-state RMS Current	$I_{T(RMS)}$	100	mA
	Peak Repetitive Surge Current (P_W=10 ms)	I_{TSM}	1	A

	Junction Temperature	T_j	125	
	Output Power Dissipation	P_O	250	mW
	Power Dissipation Derating (T_a 25)	P_D/	-3.33	mW/
Total Power Dissipation		P_{tot}	350	mW
Isolation Voltage		V_{iso}	5000	Vrms
Operating Temperature		T_{opr}	-55~100	
Storage Temperature		T_{stg}	-55~125	
Soldering Temperature		T_{sol}	260	

NOTE1:AC for 1minute, R.H.=40~60%

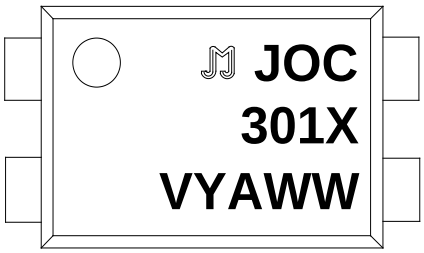
NOTE2:For 10 seconds

ELECTRICAL CHARACTERISTICS (Temperature=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	I_F=10mA	-	1.24	1.4	V
	Reverse Current	I_R	V_R=6V	-	-	1	μA
	Input Capacitance	C_{in}	V=0, f=1kHz	-	10	-	pF
Output	Peak Off-state Current, Either Direction	I_{OFF}	V_{OFF}=250V, I_F=0	-	-	100	nA
	Peak On-state Voltage, Either Direction	V_{TM}	I_{TM}=100mA	-	1.8	2.5	V
	Critical Rate of Rise of Off-state voltage	dV/dt	V_{PEAK}=250V, I_F=0	1000	-	-	V/μs

ORDERING AND MARKING INFORMATION

MARKING INFORMATION



JOC : Company Abbr.
301X : Part Number & Rank
V : VDE Option
Y : Fiscal Year
A : Manufacturing Code
WW : Work Week

ORDERING INFORMATION

JOC301XD4(Y)(Z)-GV

JOC – Company Abbr.
301X – Part Number (0/1/2)
D4 – DIP4 Package
Y – Lead Form Option (M/S/SL/SLM/None)
Z – Tape and Reel Option (T1/T3)
G – Green
V – VDE Option (V or None)

Packing Quantity

Option	Quantity	Quantity – Inner box	Quantity –Outer box
None	100 Units/Tube	32 Tubes/Inner box	10 Inner box/Outer box =32k Units
M	100 Units/Tube	32 Tubes/Inner box	10 Inner box/Outer box =32k Units
S(T1)	1500 Units/Reel	3 Reels/Inner box	5 Inner box/Outer box =22.5k Units
S(T3)	1000 Units/Reel	3 Reels/Inner box	5 Inner box/Outer box =15k Units
SL(T1)	1500 Units/Reel	3 Reels/Inner box	5 Inner box/Outer box =22.5k Units
SL(T3)	1000 Units/Reel	3 Reels/Inner box	5 Inner box/Outer box =15k Units
SLM(T1)	1500 Units/Reel	3 Reels/Inner box	5 Inner box/Outer box =22.5k Units

Characteristics Curves

FIG.1: Foo(0.000)71.1 arc C71.1 uoo(0.00rc)4.4 ents.1 .0.00at0.00e

TEST CIRCUITS

FIG.12: Test Circuits of Turn On Time

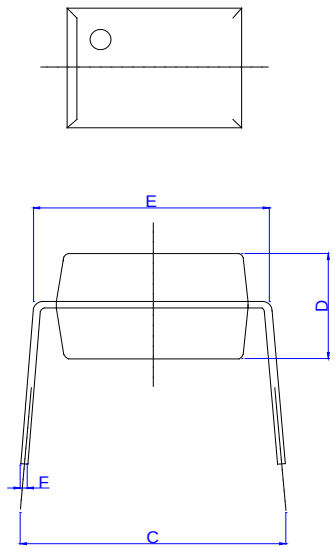
FIG.13: Waveforms of Turn On Time

Fig.14: Test Circuits of dV/dt

Fig.15: Waveforms of dV/dt

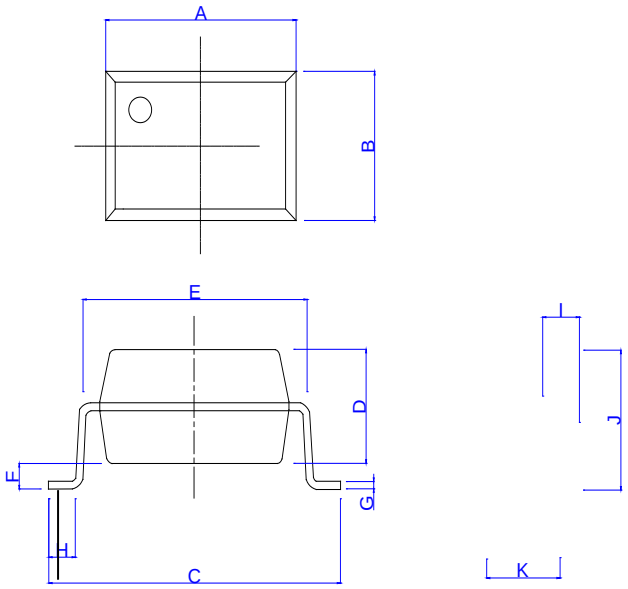
Package Dimension (Unit: mm

Standard DIP Type:



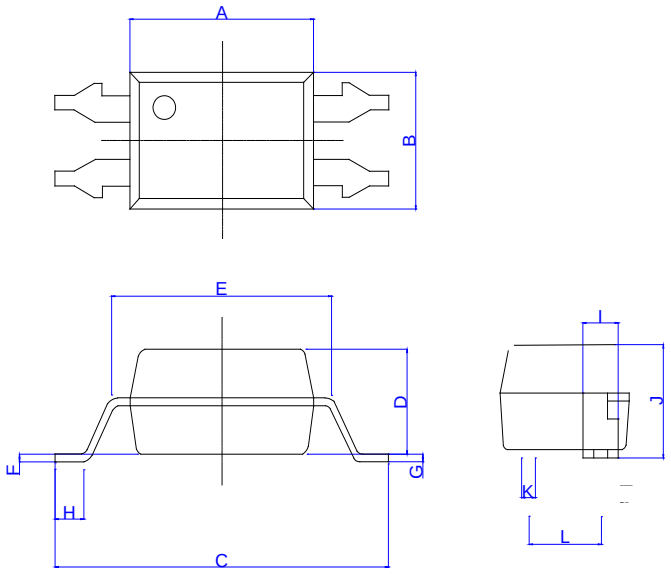
2.80

Option S Type:



Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.30		6.70	0.249		0.265
B	4.38		4.78	0.173		0.189
C	9.85		10.45	0.389		0.413
D	3.30		3.70	0.130		0.146
E	7.32		7.92	0.289		0.313
F		0.80			0.032	
G		0.25			0.010	
H		0.80			0.032	
I	1.20		1.40	0.047		0.055
J	4.00		4.60	0.158		0.182
K		2.54			0.100	

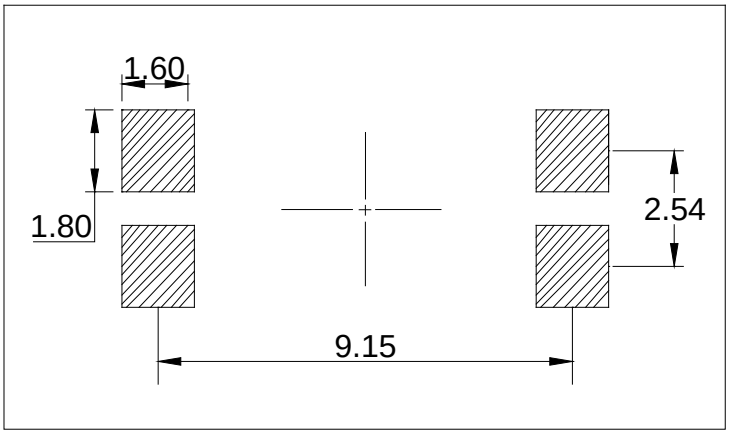
Option SLM Type:



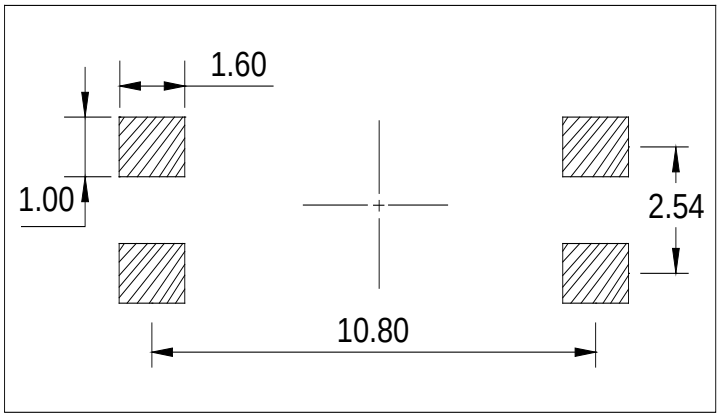
Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.30		6.70	0.248		0.264
B	4.38		4.78	0.172		0.188
C	11.50		12.10	0.453		0.476
D	3.30		3.70	0.130		0.146
E	7.32		7.92	0.288		0.312
F						
G						
H	0.40			0.016		
I	1.20		1.40	0.047		0.055
J	3.45		4.05	0.136		0.159
K						
L						

RECOMMENDED SOLDER MASK (Dimensions in mm unless otherwise stated)

Option S/SL

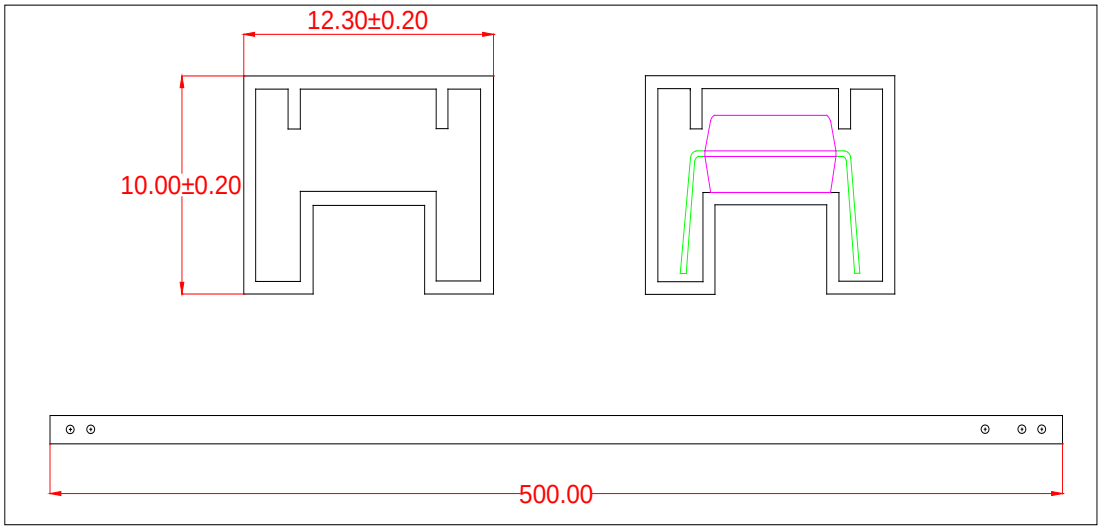


Option SLM

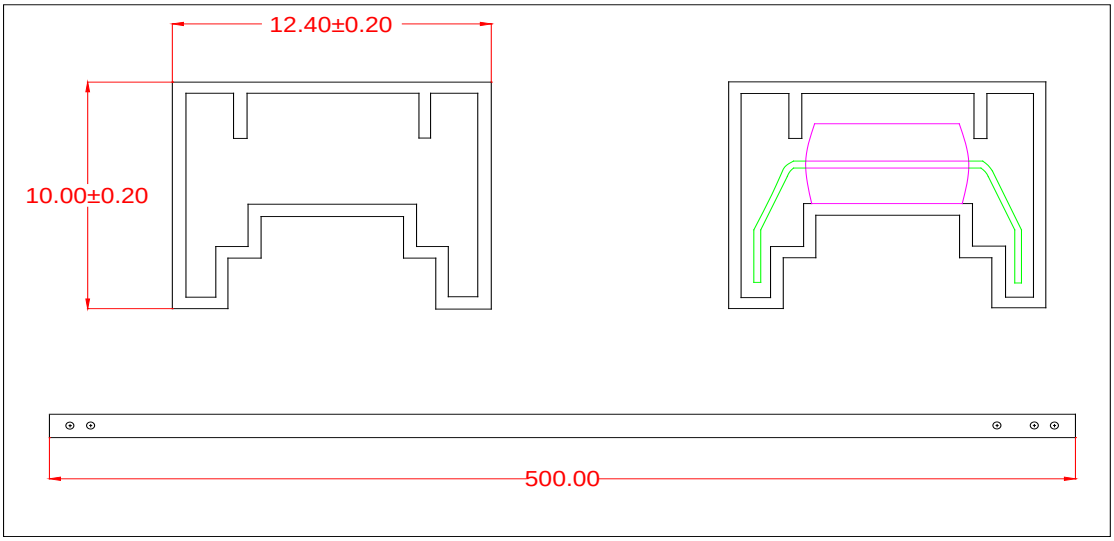


TUBE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Standard DIP

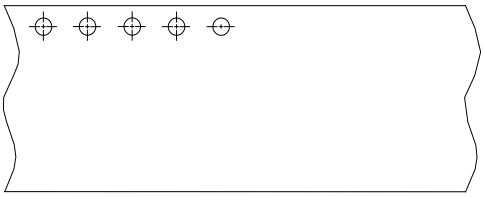


Option M



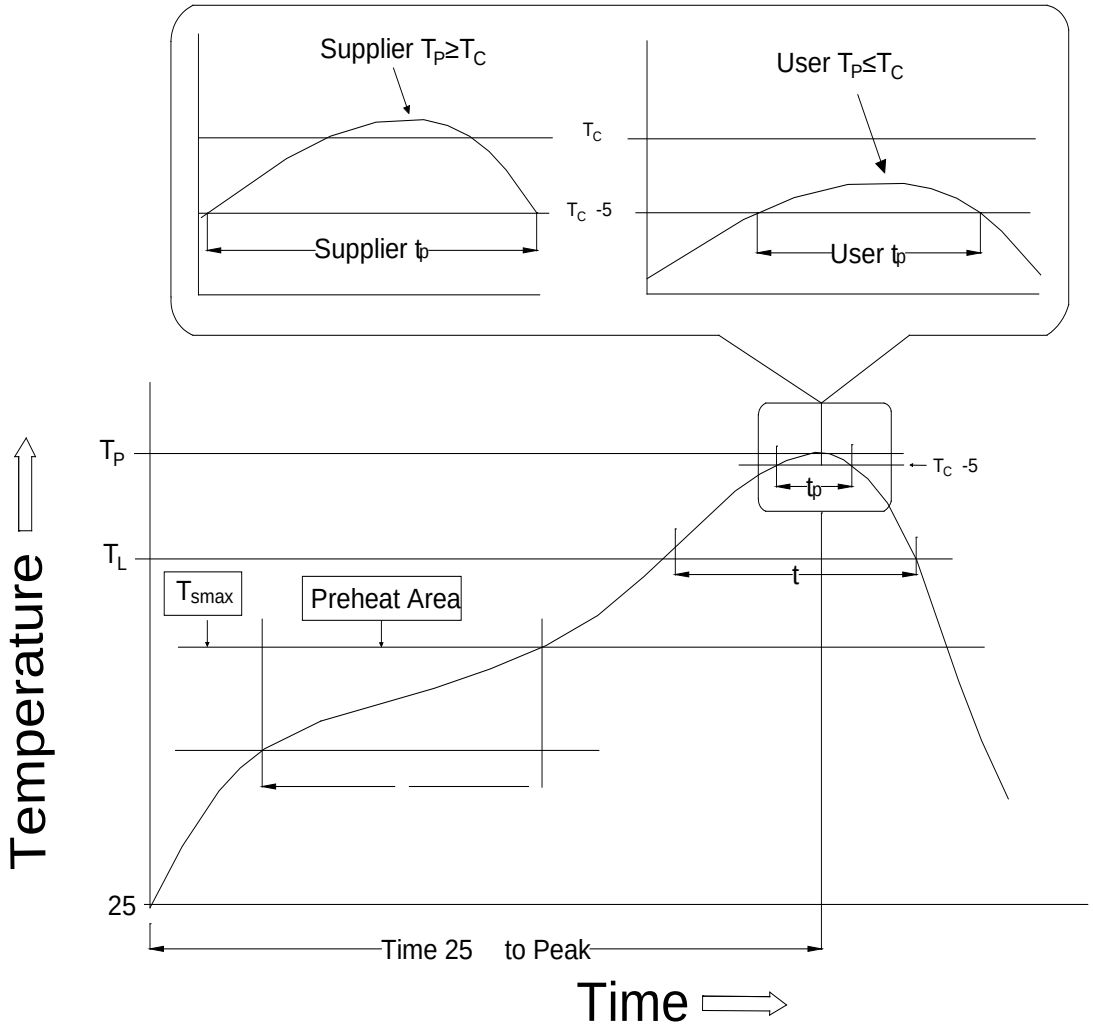
CARRIER TAPE SPECIFICATIONS (Dimensions in mm unless otherwise stated)

Option S(T1)

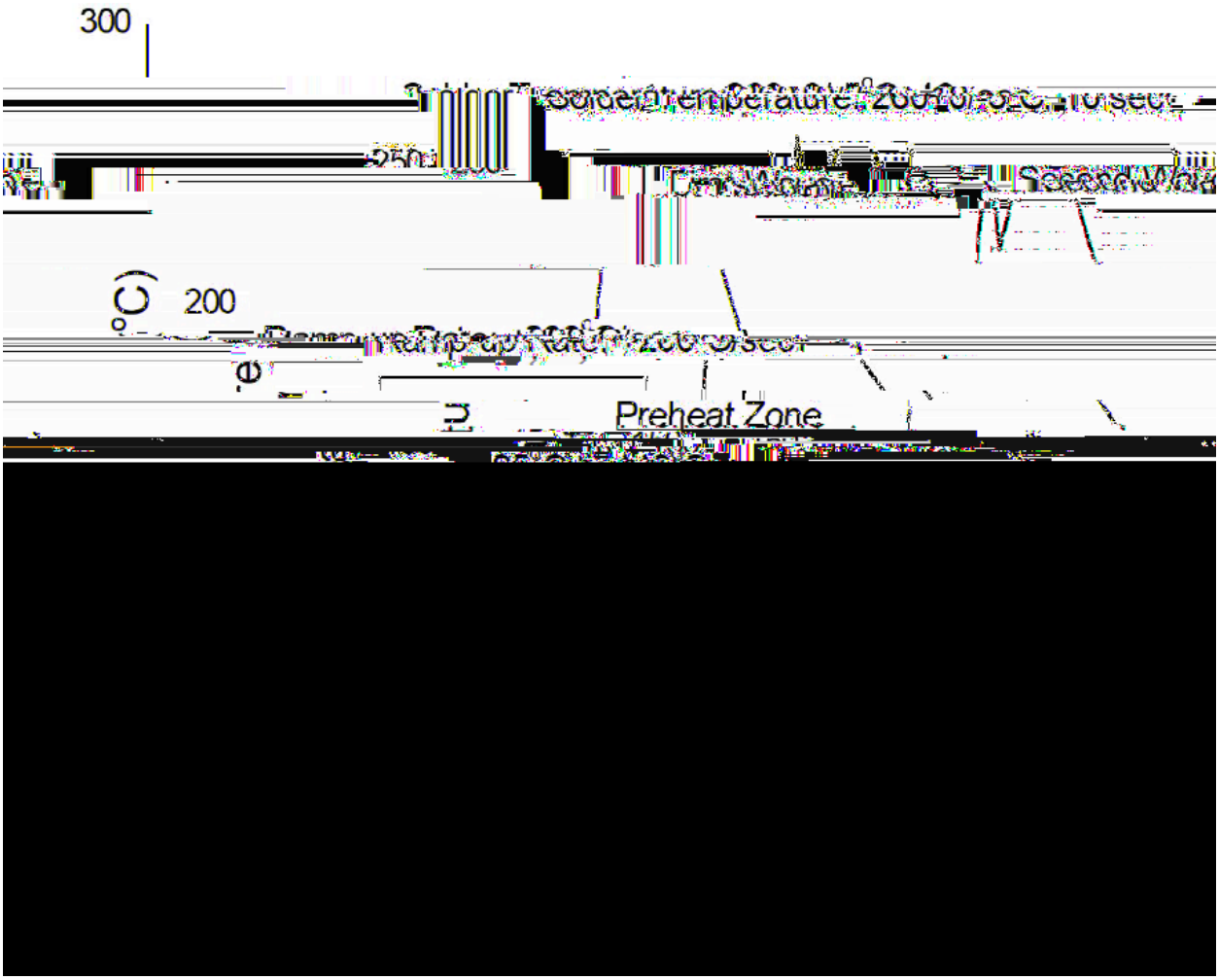


Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
D0		1.50			0.059	
P0		4.00			0.157	
P1		8.00			0.315	
P2		2.00			0.079	
E		1.75			0.069	
F		7.50			0.295	
T		0.40			0.016	
W		16.00			0.630	

REFLOW INFORMATION



WAVE SOLDERING



HAND SOLDERING BY SOLDERING IRON	
Soldering Temperature	360± 5
Soldering Time	3s max.

Document Revision History

Date	Revision	Changes
Apr.2, 2025	A.1.0	Last update
Nov.5, 2025	A.1.1	Add SLM package

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