

●Features

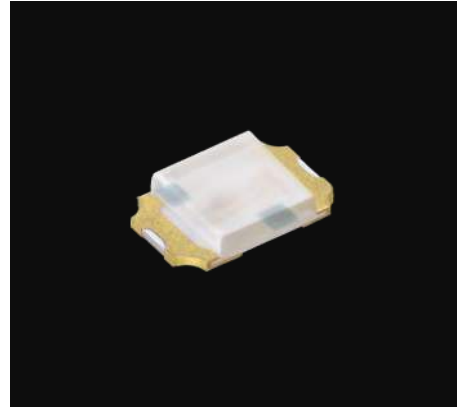
- Ultra compact, thin size 1.0×0.6mm
- Original device technology enables high brightness and high reliability

●Size

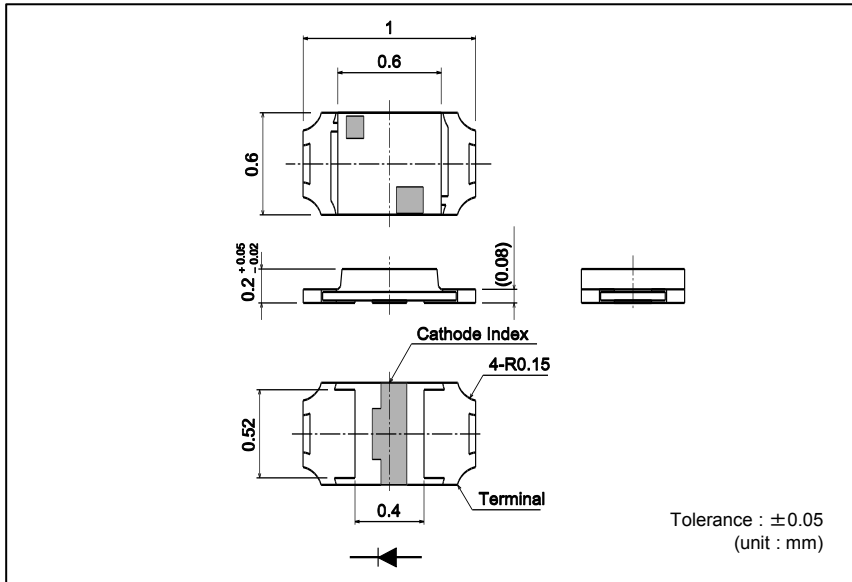
1006 (0402)
1.0 × 0.6mm (t=0.2mm)



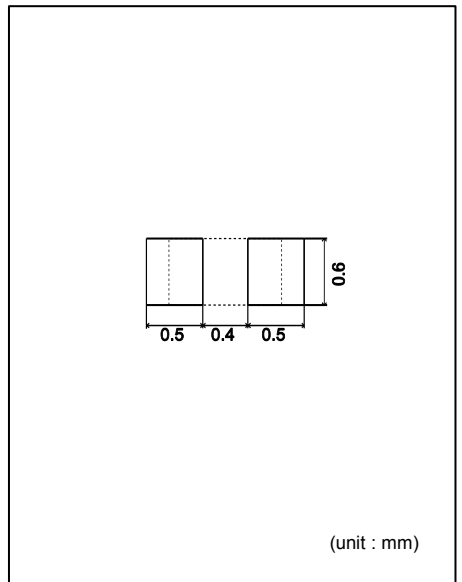
●Outline



●Dimensions



●Recommended Solder Pattern



●Specifications

Part No.	Chip Structure	Emitting Color	Absolute Maximum Ratings (Ta=25°C)					Electrical and Optical Characteristics (Ta=25°C)											
			Power Dissipation P _D (mW)	Forward Current I _F (mA)	Peak Forward Current I _{FP} (mA)	Reverse Voltage V _R (V)	Operating Temp. Topr(°C)	Storage Temp. Tstg(°C)	Forward Voltage V _F		Reverse Current I _R		Dominant Wavelength λ _D			Luminous Intensity I _v			
			Typ.	I _F	Max.	V _R	Typ.	T _{stg}	Typ.	I _F	Max.*2	V _R	Min.*2	Typ.	Max.*2	I _F	Min.	Typ.	I _F
SML-P12VT(R)	AlGaInP on GaAs	Red	50	20	100*1	5	-40 to +85	-40 to +100	2.0	20	100	4	625	630	635	20	25	60	20
SML-P12UT(R)		615	620						625				85						
SML-P12DT(R)		Orange	52						602				605	608	40		100		
SML-P12YT(R)		Yellow	587						590				593	130					
SML-P12MT(R)		Yellowish Green	54						569				572	575	10		35		
SML-P12PT(R)		Green	557						560				563	4.0	13				
SMLP13EC8T	InGaN	Bluish Green	34	10	50*1	5	-40 to +85	-40 to +100	3.0	5	5	5	520	527	535	56	(110)	5	
SMLP13BC8T(R)		Blue	33						465				470	475	9.0	(25)			
SMLP13WBC8W		White	33						(x, y) (0.30, 0.30)				90	150					

*PICOLED™ is ROHM's pending trademark.

*1 : Duty 1/10, 1kHz *2 : Reference

●Electrical Characteristics Curves

Fig.1 Forward Current - Forward Voltages

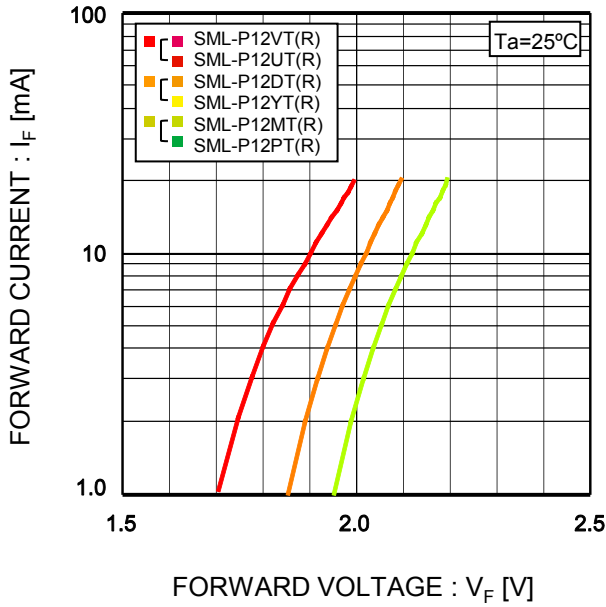


Fig.2 Luminous Intensity - Atmosphere Temperature

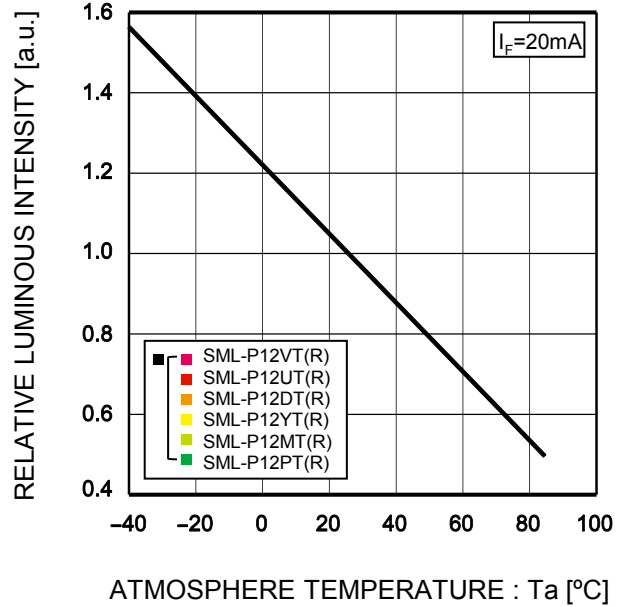


Fig.3 Luminous Intensity - Forward Current

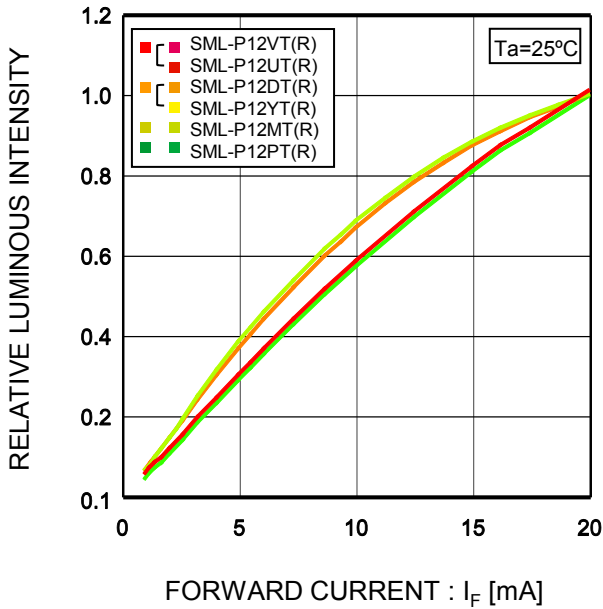
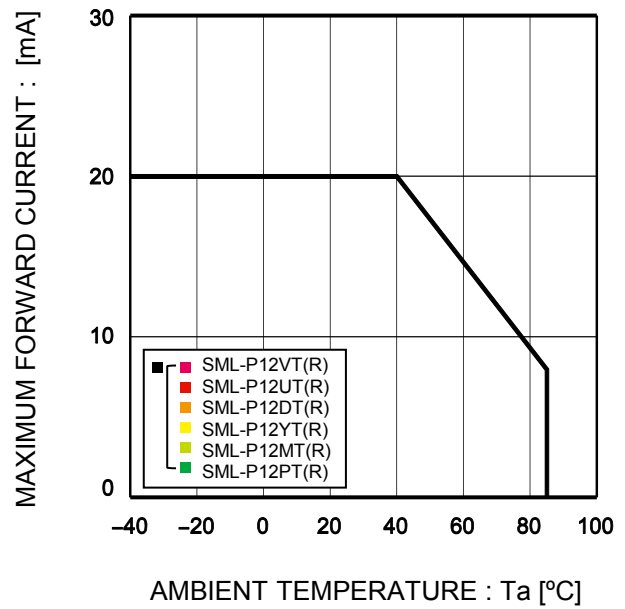


Fig.4 Derating



●Electrical Characteristics Curves

Fig.1 Forward Current - Forward Voltages

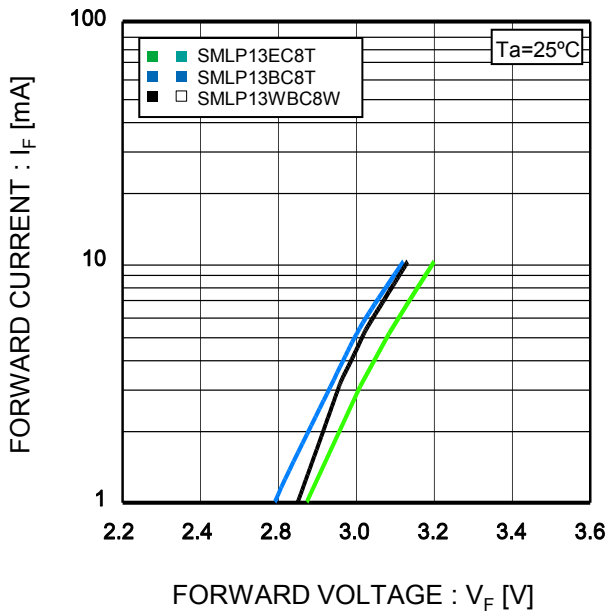


Fig.2 Luminous Intensity - Atmosphere Temperature

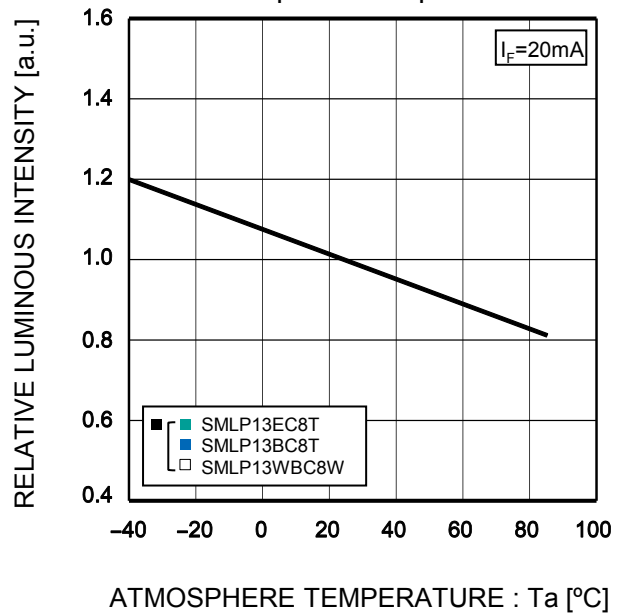


Fig.3 Luminous Intensity - Forward Current

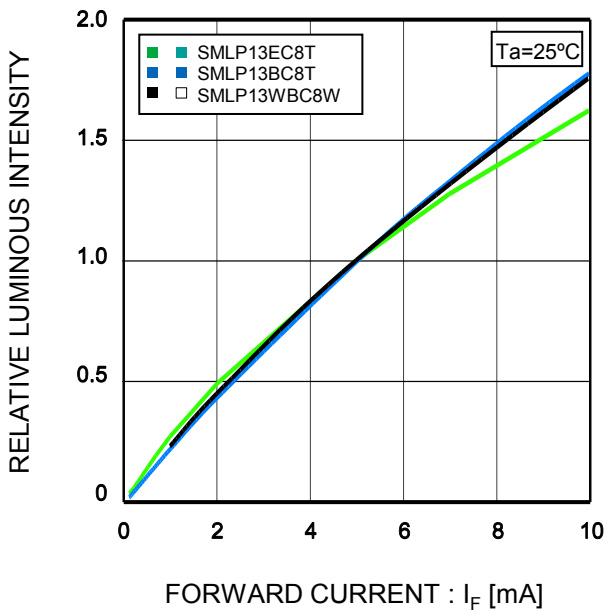
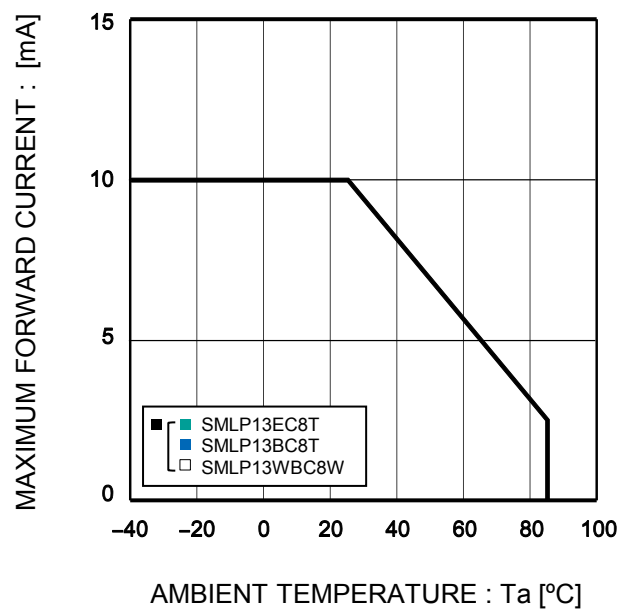
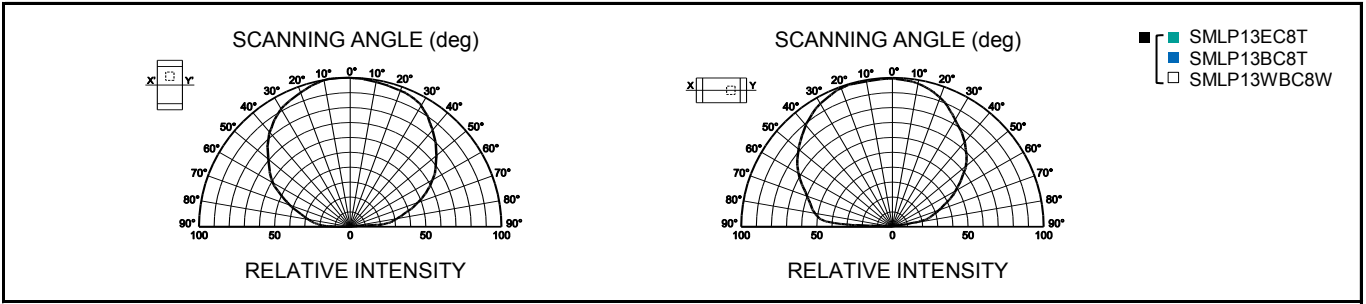
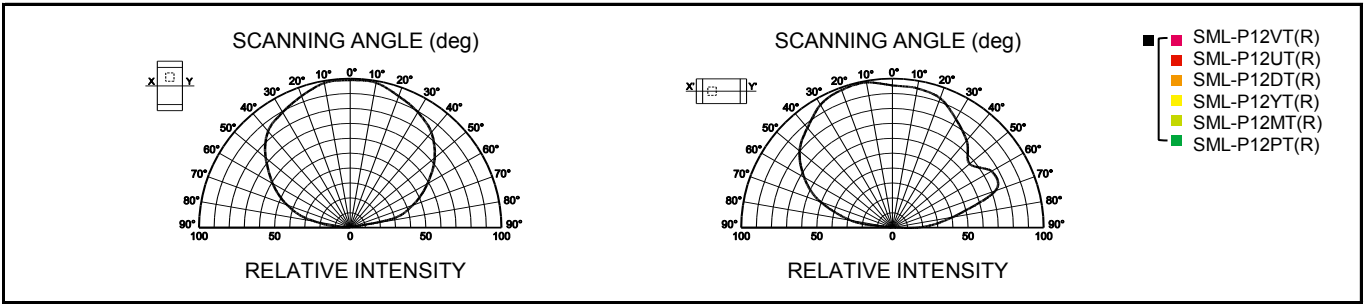


Fig.4 Derating



●Viewing Angle



●Rank Reference of Brightness

Red(V,U)

(Ta=25°C, If=20mA)

Rank	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X
Iv (mcd)	1.0 to 1.6	1.6 to 2.5	2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250	250 to 400	400 to 630	630 to 1000	1000 to 1600
SML-P12VT																
SML-P12UT																

Orange(D)

(Ta=25°C, If=20mA)

Rank	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X
Iv (mcd)	1.0 to 1.6	1.6 to 2.5	2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250	250 to 400	400 to 630	630 to 1000	1000 to 1600
SML-P12DT																

Yellow(Y)

(Ta=25°C, If=20mA)

Rank	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X
Iv (mcd)	1.0 to 1.6	1.6 to 2.5	2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250	250 to 400	400 to 630	630 to 1000	1000 to 1600
SML-P12YT																

Green(M,P)

(Ta=25°C, If=20mA)

Rank	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W	X
Iv (mcd)	1.0 to 1.6	1.6 to 2.5	2.5 to 4.0	4.0 to 6.3	6.3 to 10	10 to 16	16 to 25	25 to 40	40 to 63	63 to 100	100 to 160	160 to 250	250 to 400	400 to 630	630 to 1000	1000 to 1600
SML-P12MT																
SML-P12PT																

Bluish Green(E)

(Ta=25°C, If=5mA)

Rank	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W
Iv (mcd)	0.9 to 1.4	1.4 to 2.2	2.2 to 3.6	3.6 to 5.6	5.6 to 9.0	9 to 14	14 to 22	22 to 36	36 to 56	56 to 90	90 to 140	140 to 220	220 to 360	360 to 560	560 to 900
SMLP13EC8T															

Blue(B)

(Ta=25°C, If=5mA)

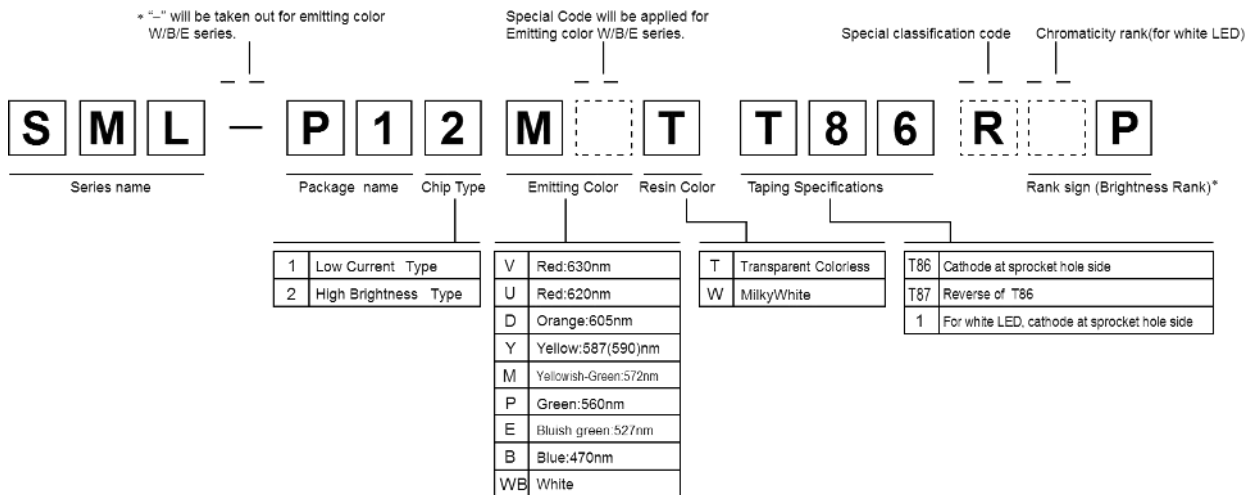
Rank	G	H	J	K	L	M	N	P	Q	R	S	T	U	V	W
Iv (mcd)	0.9 to 1.4	1.4 to 2.2	2.2 to 3.6	3.6 to 5.6	5.6 to 9.0	9 to 14	14 to 22	22 to 36	36 to 56	56 to 90	90 to 140	140 to 220	220 to 360	360 to 560	560 to 900
SMLP13BC8T															

White(WB)

(Ta=25°C, If=5mA)

Rank	N	P	Q	R	S	T	U	V	W
Iv (mcd)	14 to 22	22 to 36	36 to 56	56 to 90	90 to 140	140 to 220	220 to 360	360 to 560	560 to 900
SMLP13WBC8W									

●Part No. Construction



- * Concerning the Brightness rank
 - Please refer to the rank chart above for luminous intensity classification.
 - Part name is individual for each rank.
 - When shipped as sample, the part name will be a representative part name.
- General products are free of ranks. Please contact sales if rank appointment is needed.

●Packing Specification

ROHM LED products are being shipped with desiccant (silica gel) concluded in moisture-proof bags.

Pasting the moisture sensitive label on the outer surface of the moisture-proof bags or enclosing the humidity indication card inside the bag is available upon request.

Please contact the nearest sales office or distributor if necessary.

Notes

- 1) The information contained herein is subject to change without notice.
- 2) Before you use our Products, please contact our sales representative and verify the latest specifications :
- 3) Although ROHM is continuously working to improve product reliability and quality, semiconductors can break down and malfunction due to various factors.
Therefore, in order to prevent personal injury or fire arising from failure, please take safety measures such as complying with the derating characteristics, implementing redundant and fire prevention designs, and utilizing backups and fail-safe procedures. ROHM shall have no responsibility for any damages arising out of the use of our Products beyond the rating specified by ROHM.
- 4) Examples of application circuits, circuit constants and any other information contained herein are provided only to illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.
- 5) The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM or any other parties. ROHM shall have no responsibility whatsoever for any dispute arising out of the use of such technical information.
- 6) The Products are intended for use in general electronic equipment (i.e. AV/OA devices, communication, consumer systems, gaming/entertainment sets) as well as the applications indicated in this document.
- 7) The Products specified in this document are not designed to be radiation tolerant.
- 8) For use of our Products in applications requiring a high degree of reliability (as exemplified below), please contact and consult with a ROHM representative : transportation equipment (i.e. cars, ships, trains), primary communication equipment, traffic lights, fire/crime prevention, safety equipment, medical systems, servers, solar cells, and power transmission systems.
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