EVERLIGHT AMERICAS

DATASHEET

SMD ▪ Full Color Top View LEDs
EAPL3528RGA1

PRELIMINARY



Features

- P-LCC-4 package.
- White package.
- Optical indicator.
- Colorless clear window.
- Ideal for backlight and light pipe application.
- Inter reflector.
- Wide viewing angle.
- Suitable for vapor-phase reflow.
- Computable with automatic placement equipment.
- Available on tape and reel (8mm Tape).
- Pb-free.
- The product itself will remain within RoHS compliant version.
- Precondition: Bases on JEDEC J-STD 020D Level 3

Description

This series is available in soft red, green,blue and yellow. Due to the package design, the LED has wide viewing angle and optimized light coupling by inter reflector. This feature makes the ideal for light pipe application. The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

Applications

- Telecommunication: indicator and backlighting in telephone and fax.
- Flat backlight for LCD's, switches and symbols.
- Light pipe application.
- General use.

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Device Selection Guide

Chip Materials	Emitted Color	Resin Color
AlGaInP	Brilliant Red	Water Clear
AlGaInP	Brilliant Yellow Green	Water Clear

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Reverse Voltage	V_R	5	V
Forward Current	I_F	50	mA
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Power Dissipation	Pd	120	mW
Junction Temperature	T_j	115	℃
Operating Temperature	T_{opr}	-40 ~ +85	℃
Storage Temperature	Tstg	-40 ~ +90	℃
Thermal Resistance	Rth $_{J-A}$	500	K/W
	Rth $_{J-S}$	300	K/W
ESD (Classification acc. AEC Q101)	ESD_{HBM}	2000	V
	ESD_{MM}	200	V
Soldering Temperature	T_{sol}	Reflow Soldering : 260 ℃ for 10 sec. Hand Soldering : 350 ℃ for 3 sec.	

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Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol		Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	R6S	57	-----	140	mcd	I_F=20mA
		G6S	36	-----	90		
Viewing Angle	$2\theta_{1/2}$		-----	120	-----	deg	I_F=20mA
Peak Wavelength	λp	R6S	-----	632	-----	nm	I_F=20mA
		G6S	-----	575	-----		
Dominant Wavelength	λd	R6S	617.5	-----	633.5	nm	I_F=20mA
		G6S	567.5	-----	575.5		
Spectrum Radiation Bandwidth	Δλ	R6S	-----	20	-----	nm	I_F=20mA
		G6S	-----	18	-----		
Forward Voltage	V_F	R6S	1.75	-----	2.35	V	I_F=20mA
		G6S	1.75	-----	2.35		
Reverse Current	I_R	R6S	-----	-----	50	μA	V_R=5V
		G6S	-----	-----	50	μA	V_R=5V

Note:
1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V

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Bin Range of Luminous Intensity

Chip	Bin Code	Min.	Max.	Unit	Condition
R6S	P2	57.0	72.0	mcd	I_F =20mA
	Q1	72.0	90.0		
	Q2	90.0	112		
	R1	112	140		
G6S	N2	36.0	45.0		
	P1	45.0	57.0		
	P2	57.0	72.0		
	Q1	72.0	90.0		

Note:
Tolerance of Luminous Intensity: ±11%

Bin Range of Dominant Wavelength

Chip	Bin Code	Min.	Max.	Unit	Condition
R6S	E4	617.5	621.5	nm	I_F =20mA
	E5	621.5	625.5		
	E6	625.5	629.5		
	E7	629.5	633.5		
G6S	C15	567.5	569.5		
	C16	569.5	571.5		
	C17	571.5	573.5		
	C18	573.5	575.5		

Note:
Tolerance of Dominant Wavelength: ±1nm

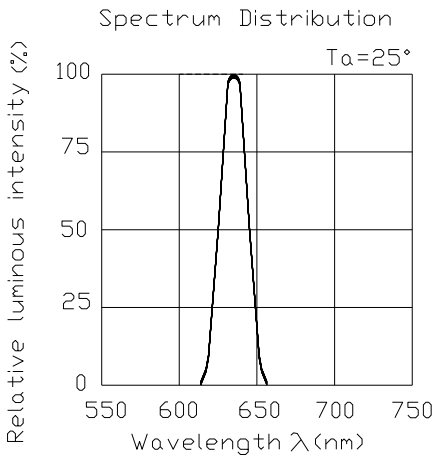
Bin Range of Forward Voltage

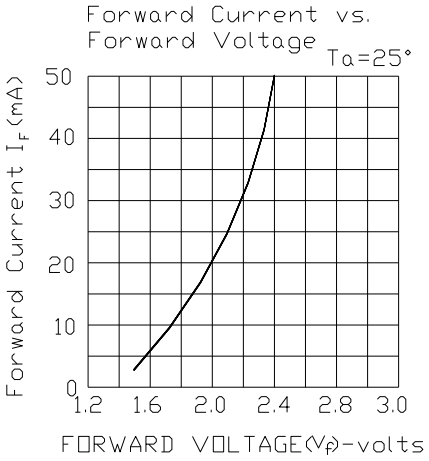
Chip	Bin Code	Min.	Max.	Unit	Condition
R6S	0	1.75	1.95	V	I_F =20mA
	1	1.95	2.15		
	2	2.15	2.35		
G6S	0	1.75	1.95		
	1	1.95	2.15		
	2	2.15	2.35		

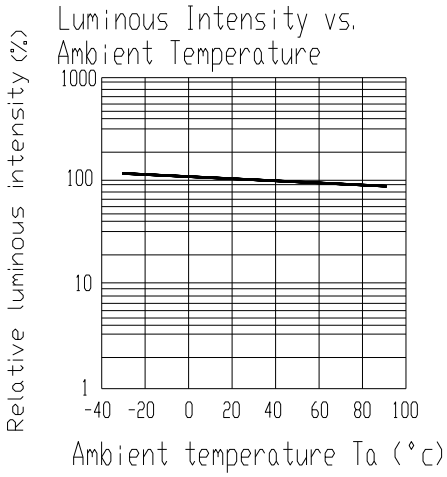
Note:
Tolerance of Forward Voltage: ±0.1V

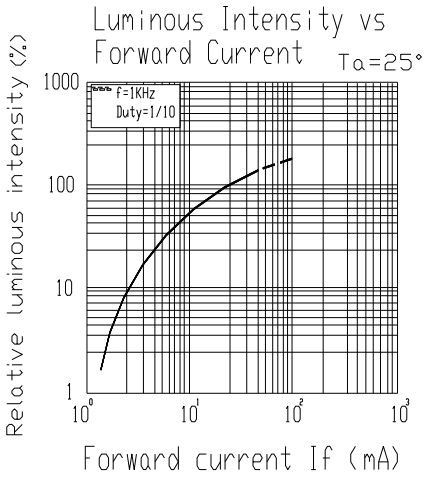
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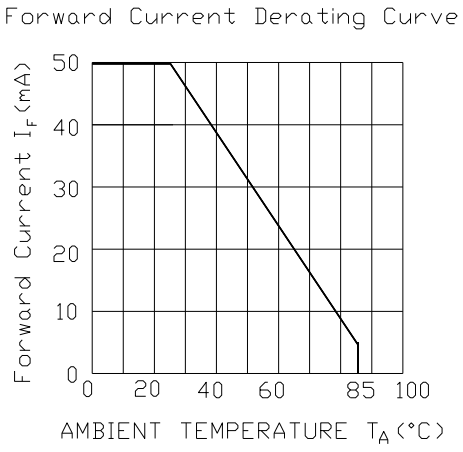
Typical Electro-Optical Characteristics Curves

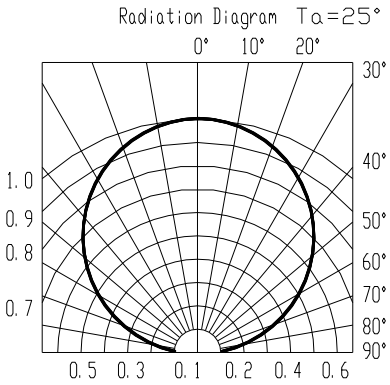






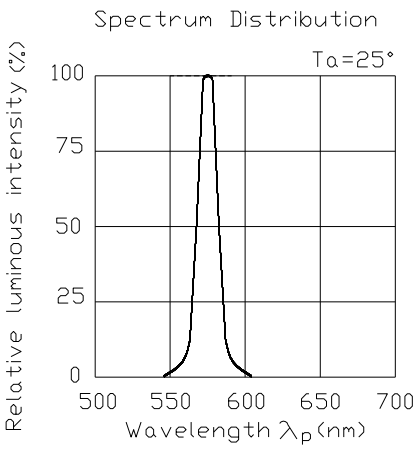


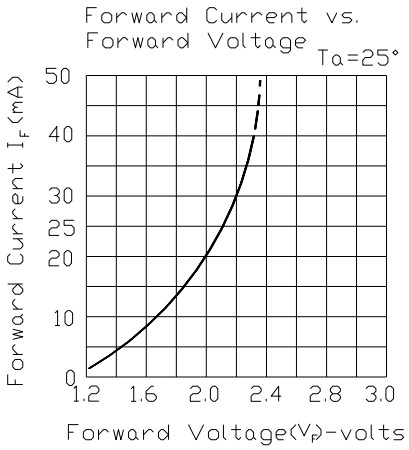


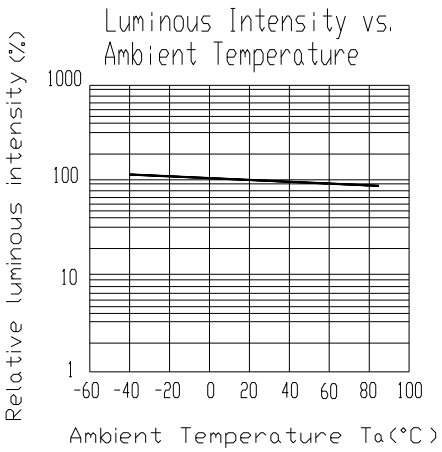


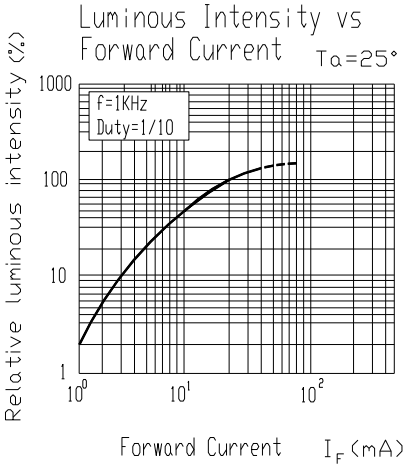
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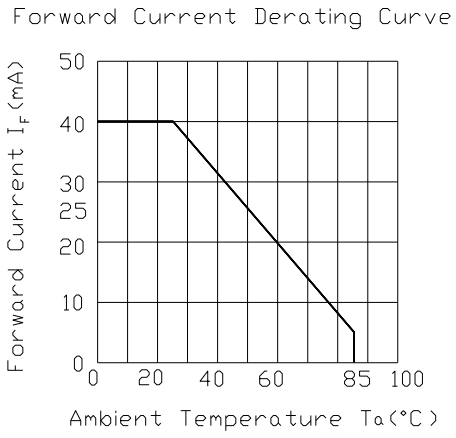
Typical Electro-Optical Characteristics Curves

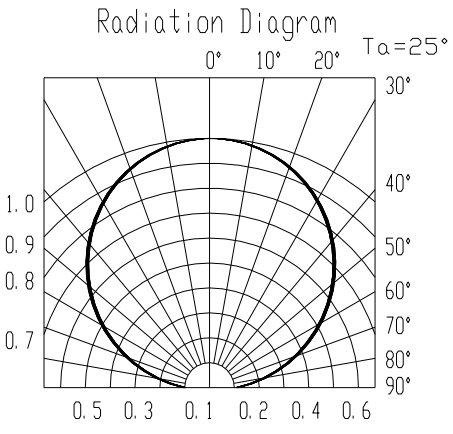






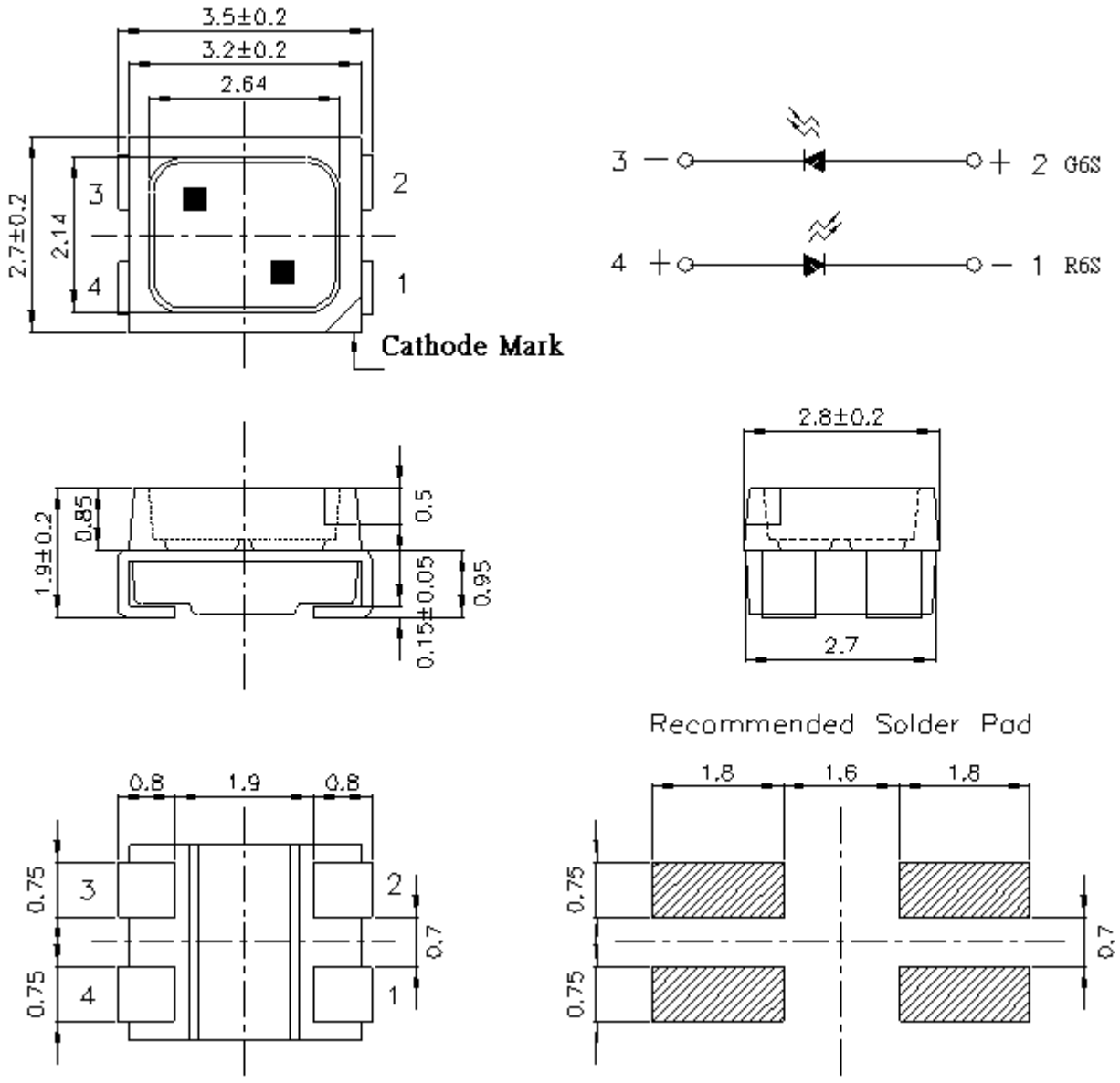






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Package Dimension



Note: Tolerances unless mentioned ±0.1mm. Unit = mm

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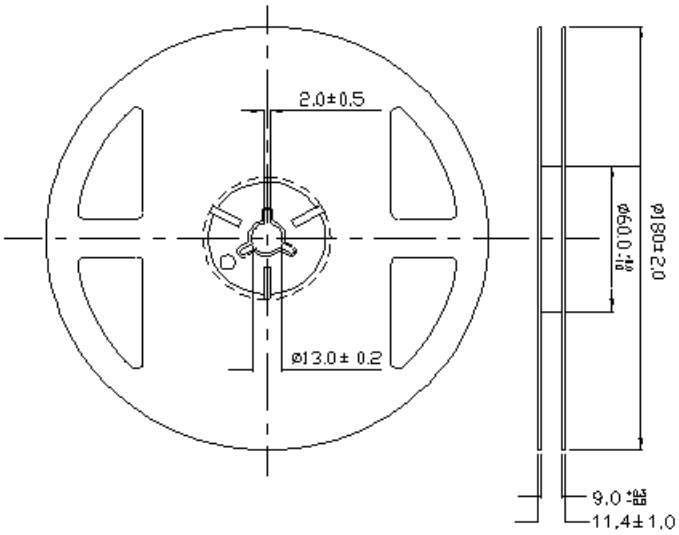
Moisture Resistant Packing Materials

Label Explanation

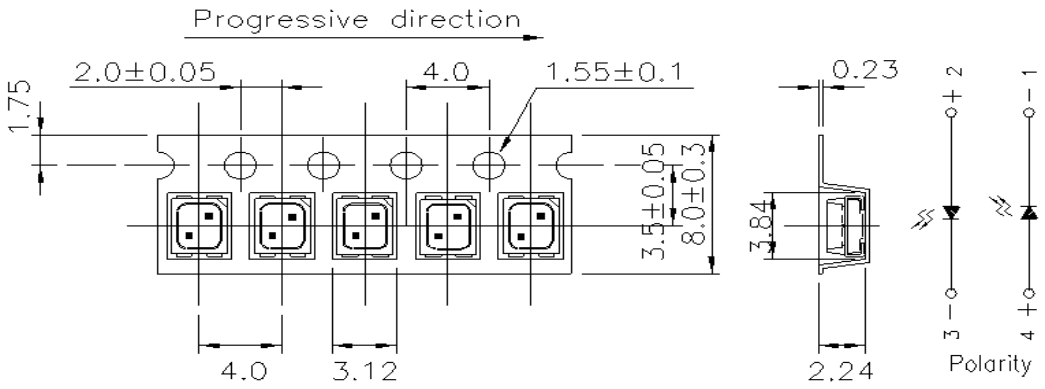


- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number

Reel Dimensions



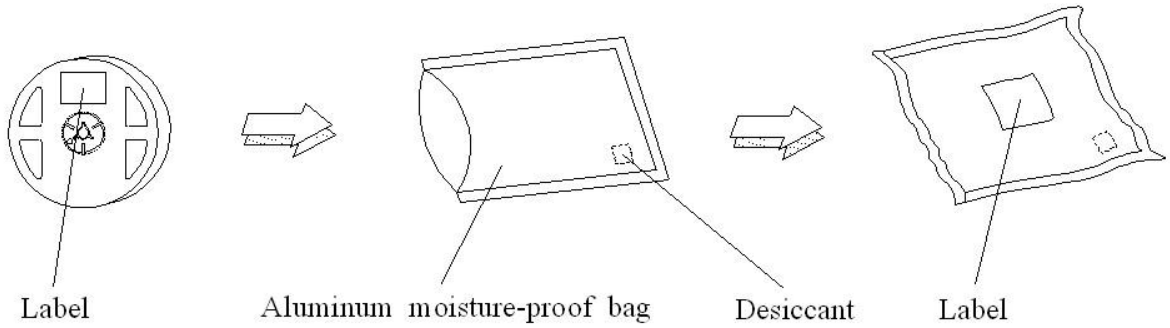
Carrier Tape Dimensions: Loaded Quantity 2000 pcs Per Reel



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Moisture Resistant Packing Process

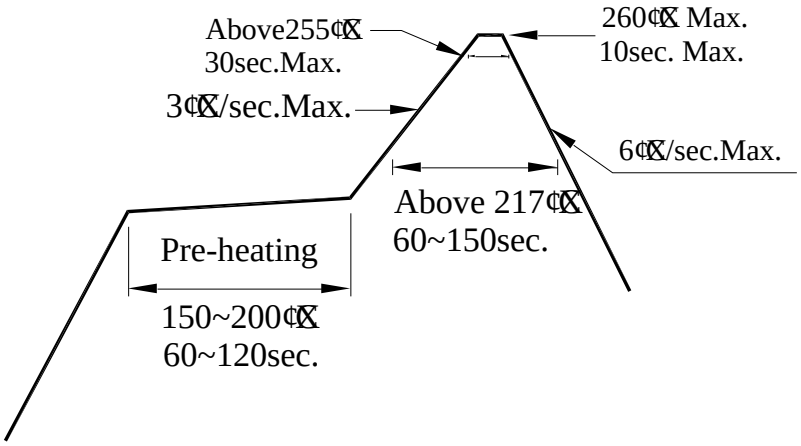


Note: Tolerances unless mentioned ±0.1mm. Unit = mm

Precautions for Use

1. Over-current-proof

1.1 Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).



2. Storage

2.1 Moisture proof bag should only be opened immediately prior to usage.

2.2 Environment should be less than 30℃ and 60% RH when moisture proof bag is opened.

2.3 After opening the package MSL Conditions stated on page 1 of this spec should not be exceeded.

2.4 If the moisture sensitivity card indicates higher than acceptable moisture, the component should be baked at min. 60deg +/-5deg for 24 hours.

3. Soldering Condition

3.1 Pb-free solder temperature profile

3.2 Reflow soldering should not be done more than two times.

3.3 When soldering, do not put stress on the LEDs during heating.

3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less

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than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

Application Restrictions

High reliability applications such as military/aerospace, automotive safety/security systems, and medical equipment may require different product. If you have any concerns, please contact Everlight before using this product in your application. This specification guarantees the quality and performance of the product as an individual component. Do not use this product beyond the specification described in this document.

Revision History

Rev.	Modified date	File modified contents
1	2014/4/30	New Spec

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