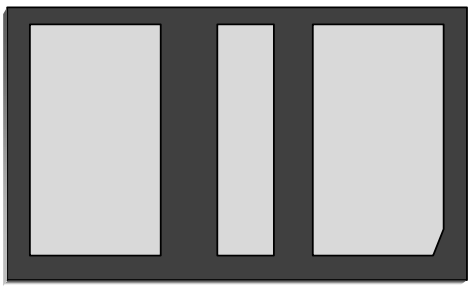
WBSP6030

Features

- Superior circuit protection
- Overcurrent and overvoltage protection
- Blocks surges up to rated limits
- High-speed performance
- Small SMT package



DFN6540-3L

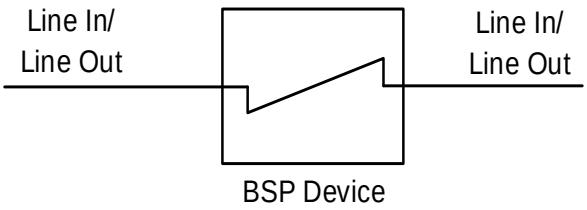
Mechanical Characteristics

- DFN6540-3L package
- Marking : Marking Code
- RoHS Compliant & HF
- Device meets MSL3 requirement

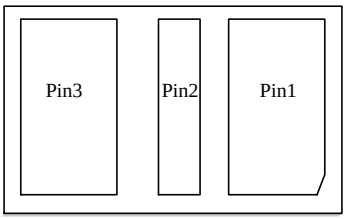
Applications

- Voice / VDSL cards
- Protection modules and dongles
- Process control equipment
- Test and measurement equipment
- General electronics

Circuit Diagram



Schematic & PIN Configuration



Pin	Identificaion
1	Line In/Out
2	NU
3	Line Out/In

Absolute Maximum Ratings (@ TA = 25 °C Unless Otherwise Noted)

Symbol	Parameter	Part Number	Value	Units
V_{imp}	Peak impulse voltage withstand with duration less than 10 ms	WBSP6030	650	V
V_{rms}	Continuous A.C. RMS voltage	WBSP6030	300	V
T_{op}	Operating temperature range	-55 to + 125	-55 to + 125	℃
T_{stg}	Storage temperature range	-65 to +150	-65 to +150	℃
T_{jmax}	Maximum Junction Temperature	+125	+125	℃
ESD	HBM ESD protection per IEC 61000-4-2	±2	±2	kV

Electrical Characteristics(T=25℃ unless otherwise noted)

Symbol	Parameter	Min	Typ	Max	Units
$I_{trigger}$	Current required for the device to go from operating state to protected state	300	450	600	mA
R_{device}	Series resistance of the BSP device		7.6	8.8	Ω
t_{block}	Time for the device to go from normal operating state to protected state			1	us
I_Q	Current through the triggered BSP® device with 50 Vdc circuit voltage			1.00	mA
V_{reset}	Voltage below which the triggered BSP® device will transition to normal operating state	12	16	20	V
$R_{th(j-l)}$	Junction to package pads - FR4 using recommended pad layout		98		℃/W
$R_{th(j-l)}$	Junction to package pads - FR4 using recommended pad layout		40		℃/W

Environmental Characteristics

Part Number	Value
Moisture Sensitivity Level	3
ESD Classification (HBM)	1B

Typical Characteristics

Figure 1: Typical V-I Characteristics

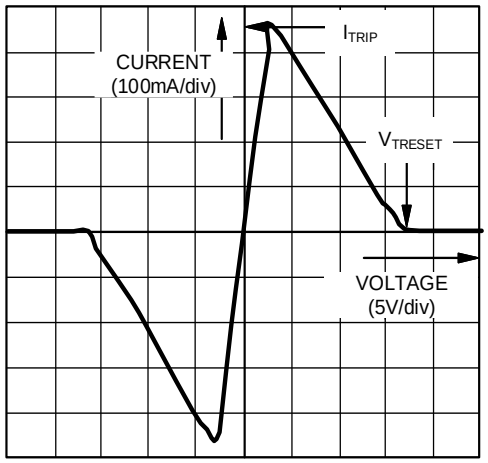


Figure 2: Typical Trigger Current vs. Temperature

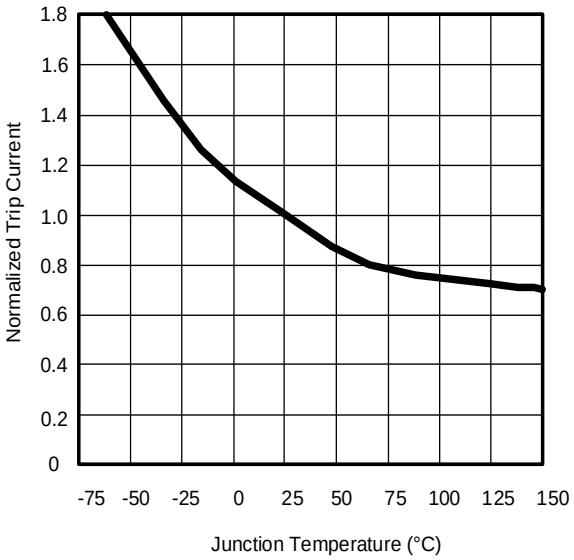


Figure 3: Power Derating Curve

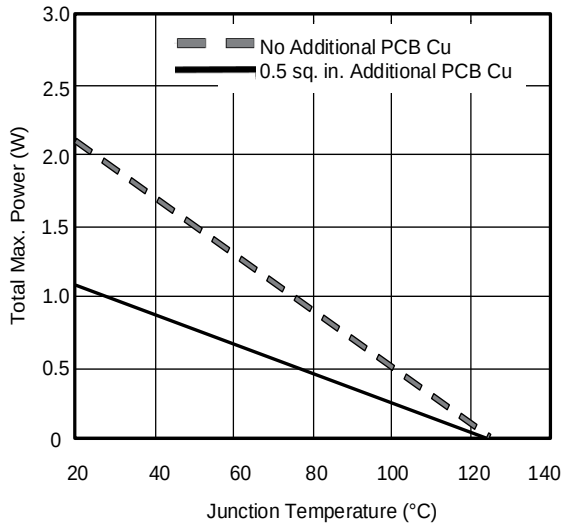
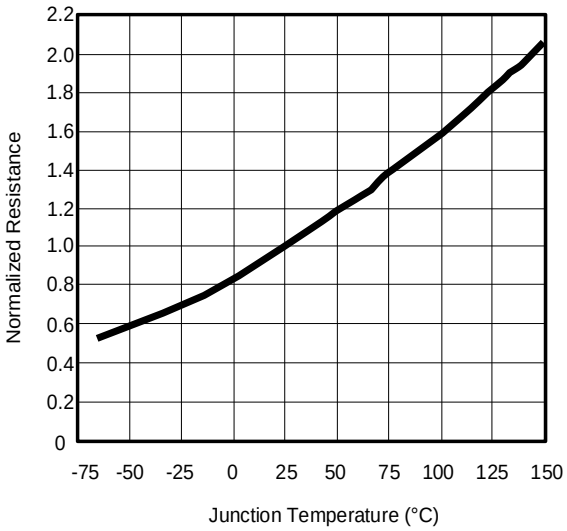
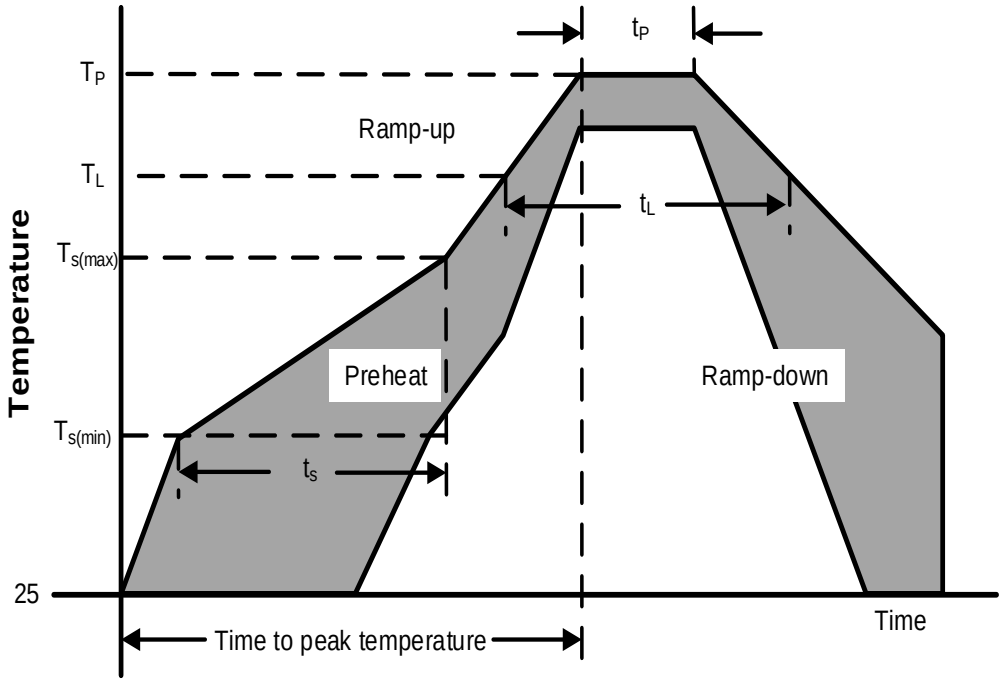


Figure 4: Typical Resistance vs. Temperature



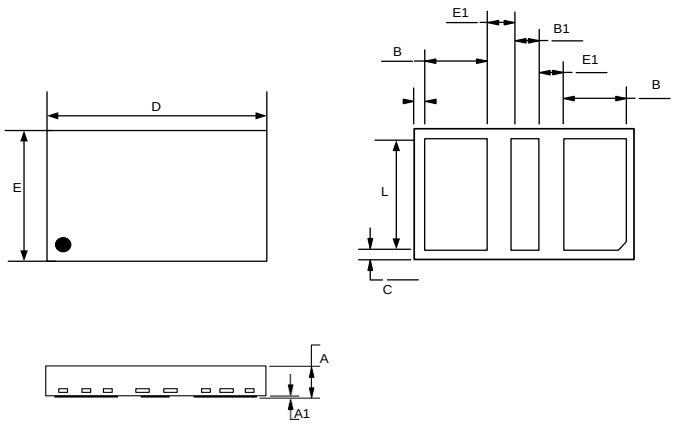
Soldering Parameters

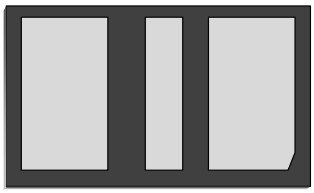
Reflow Condition		Pb – Free assembly
Pre Heat	Temperature Min ($T_{s(min)}$)	150°C
	Temperature Max ($T_{s(max)}$)	200°C
	Time (min to max) (ts)	60 – 190 secs
Average ramp up rate (Liquidus Temp) (T_L) to peak		5°C/second max
$T_{S(max)}$ to T_L——Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260+0/-5 °C
Time within actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C



Outline Drawing –DFN6540-3L

PACKAGE OUTLINE





DFN6540-3L

SYMBOL	MILLIMETERS		
	MIN	TYP	MAX
A	0.80	0.90	1.00
A1	0	-	0.05
D	6.40	6.50	6.60
E	3.90	4.00	4.10
E1	0.65	0.70	0.75
B	1.80	1.85	1.90
B1	0.75	0.80	0.85
L	3.30	3.40	3.50
C	0.25	0.30	0.35

Marking Codes

Part Number	Marking Code
WBSP6030	WBSP XXXX ●

WBSP=Specific Device Code

XXXX=Lot Code

Package Information

Qty：3K/Reel

CONTACT INFORMATION

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For additional information, please contact your local Sales Representative.

Product Specification Statement

1. The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

2. The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. WAYON shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and WAYON assumes no responsibility for the application of the product.

3. WAYON strives to provide accurate and up-to-date information to the best of our ability. However, due to technical, human, or other reasons, WAYON cannot guarantee that the information provided in the product specification is entirely accurate and error-free. WAYON shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications. WAYON reserves the right to revise or update the product specification and the products at any time without prior notice, and the user's continued use of the product specification is considered an acceptance of these revisions and updates. Prior to purchasing and using the product, users should verify the above information with WAYON to ensure that the product specification is the most current, effective, and complete. If users are particularly concerned about product parameters, please consult WAYON in detail or request relevant product test reports. Any data not explicitly mentioned in the product specification shall be subject to separate agreement.

4. Users are advised to pay attention to the parameter limit values specified in the product specification and maintain a certain margin in design or application to ensure that the product does not exceed the parameter limit values defined in the product specification. This precaution should be taken to avoid exceeding one or more of the limit values, which may result in permanent irreversible damage to the product, ultimately affecting the quality and reliability of the system or equipment.

5. The design of the product is intended to meet civilian needs and is not guaranteed for use in harsh environments or precision equipment. It is not recommended for use in systems or equipment such as medical devices, aircraft, nuclear power, and similar systems, where failures in these systems or equipment could reasonably be expected to result in personal injury. WAYON shall assume no responsibility for any consequences resulting from such usage.

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