



# PSC1065H

650 V, 10 A SiC Schottky diode in DPAK R2P

26 April 2023

Short data sheet

## 1. General description

Nexperia introduces leading edge Silicon Carbide (SiC) Schottky diode for ultra high performance, low loss, high efficiency power conversion applications. The SiC Schottky diode encapsulated in a Real-2-Pin DPAK R2P (TO-252-2) Surface-Mounted Device (SMD) power plastic package offers temperature independent capacitive turn-off, zero recovery switching behavior combined with an outstanding figure-of-merit ( $Q_C \times V_F$ ). The Merged PiN Schottky (MPS) diode improves the robustness expressed in a high  $I_{FSM}$ .

## 2. Features and benefits

- Zero forward and reverse recovery
- Temperature independent fast and smooth switching performance
- Outstanding figure-of-merit ( $Q_C \times V_F$ )
- High  $I_{FSM}$  capability
- High power density
- Reduced system cost
- System miniaturization
- Reduced EMI

## 3. Applications

- Switch Mode Power Supply (SMPS)
- AC-DC and DC-DC converter
- Battery charging infrastructure
- Server and telecom power supply
- Uninterruptible Power Supply (UPS)
- Photovoltaic inverters

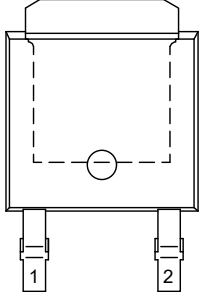
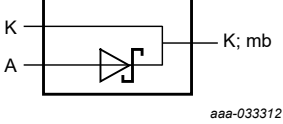
## 4. Quick reference data

Table 1. Quick reference data

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
$V_{DC}$	DC blocking voltage		650	-	-	V
$I_F$	forward current	$\delta = 1$ ; $T_{case} \leq 140\text{ }^\circ\text{C}$ ; $D = 1$	-	-	10	A
$Q_C$	total capacitive charge	$V_R = 400\text{ V}$ ; $di_F/dt = 200\text{ A}/\mu\text{s}$ ; $I_F \leq I_{Fmax}$ ; $T_j = 150\text{ }^\circ\text{C}$	-	22	-	nC

## 5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	cathode	 <p>DPAK R2P (SOT8017)</p>	 <p>aaa-033312</p>
2	A	anode		
mb	K	mounting base; connected to cathode		

## 6. Ordering information

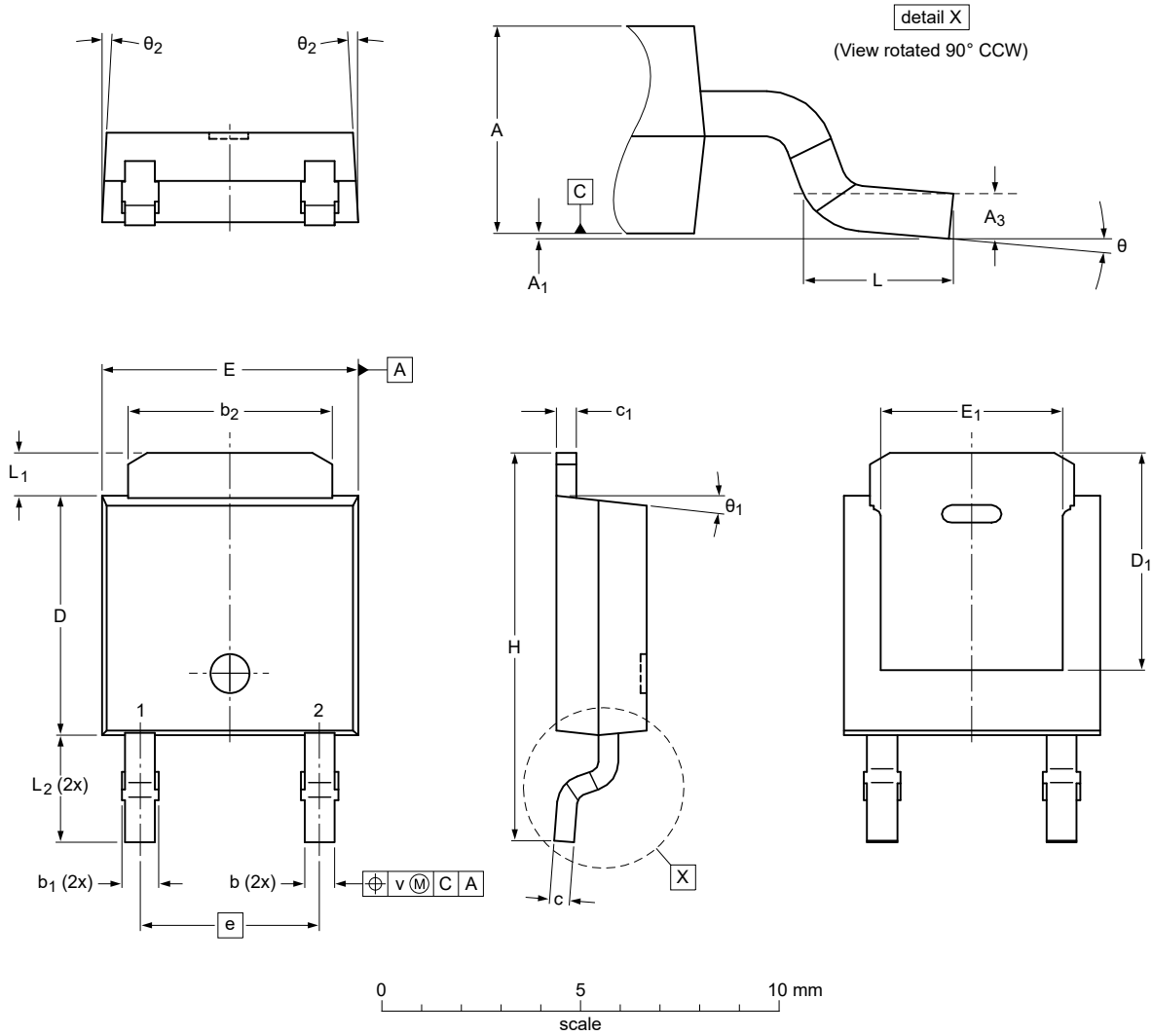
Table 3. Ordering information

Type number	Package		
	Name	Description	Version
PSC1065H	DPAK R2P	Plastic, single-ended surface-mounted package (DPAK R2P); Real-2-Pin configuration; 4.58 mm pitch; 6.16 mm x 6.54 mm x 2.29 mm body	SOT8017

### 7. Package outline

Plastic, single-ended surface-mounted package (DPAK R2P); Real-2-Pin configuration;  
4.58 mm pitch; 6.16 mm x 6.54 mm x 2.29 mm body

SOT8017



Dimensions (mm are the original dimensions)

Unit	A	A <sub>1</sub>	A <sub>3</sub>	b	b <sub>1</sub>	b <sub>2</sub>	c	c <sub>1</sub>	D	D <sub>1</sub>	E	E <sub>1</sub>	e	H	L	L <sub>1</sub>	L <sub>2</sub>	θ	θ <sub>1</sub>	θ <sub>2</sub>	v
mm	max 2.39	0.13	0.51	0.89	1.13	5.46	0.61	0.60	6.22	5.70	6.73	4.80	4.58	10.34	1.78	1.27	2.74	10°	15°	3°	0.25
	nom		(TYP.)	0.65	0.76	4.95	0.46	0.46	5.97	5.21	6.35	4.32		9.94	1.50	0.89	(REF.)	0°	0°	(REF.)	
	min 2.18	0.00																			

Note

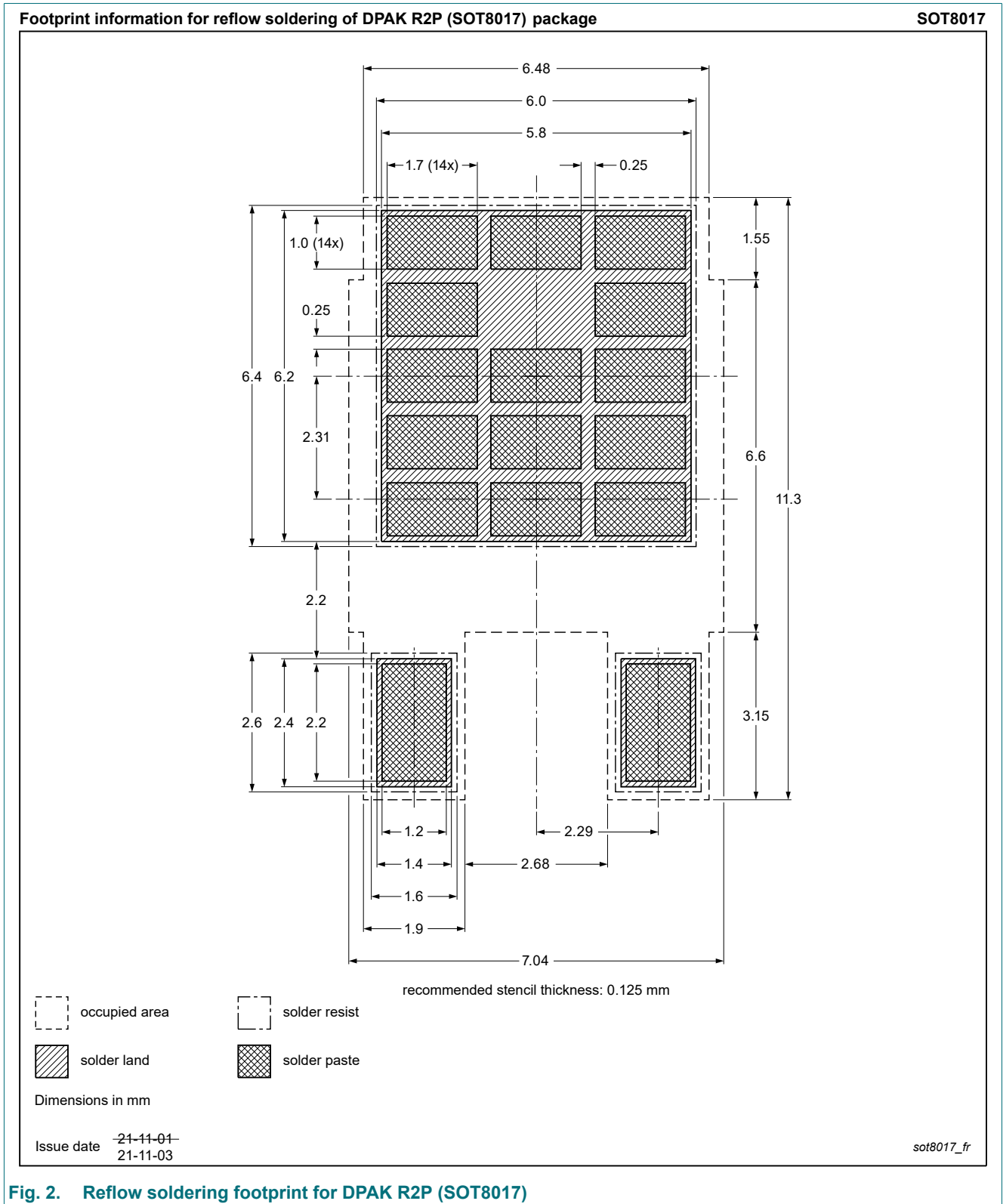
1. Heat sink side flash is 0.8 mm max.

sot8017\_po

Outline version	References				European projection	Issue date
	IEC	JEDEC	JEITA			
SOT8017		TO-252-2				21-02-10 21-11-03

Fig. 1. Package outline DPAK R2P (SOT8017)

### 8. Soldering



**Fig. 2. Reflow soldering footprint for DPAK R2P (SOT8017)**

## 9. Revision history

Table 4. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
PSC1065H_SDS v.2	20230426	Short data sheet	-	PSC1065H_SDS v.1
Modifications:	• Quick reference data, total capacitive charge: value adapted			
PSC1065H_SDS v.1	20211104	Short data sheet	-	-

## 10. Legal information

### Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

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- [2] The term 'short data sheet' is explained in section "Definitions".
- [3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at <https://www.nexperia.com>.

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