



DONGGUAN NANJING ELECTRONICS LTD.,  
**TO-252-2L Silicon Carbide Schottky Diode**

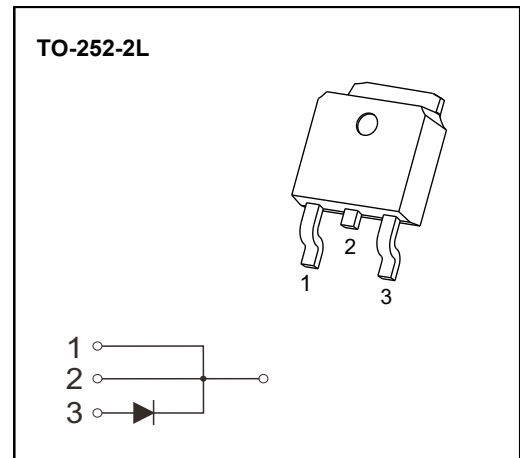
**NJ04PS065D** SiC Diode 650V,4A,12.5nC

**General Description**

This product family offers state of the art performance. It is designed for high frequency applications here high efficiency and high reliability are required.

**Features**

- Zero Forward/Reverse Recovery Current
- High Blocking Voltage
- High Frequency Operation
- Positive Temperature Coefficient on VF
- Temperature Independent Switching Behavior



**Applications**

- Switch Mode Power Supplies
- Solar Inverters
- AC/DC converters
- DC/DC converters
- Uninterruptable power supplies

**Benefits**

- Higher System Efficiency
- Parallel Device Convenience
- Higher Temperature Application
- High Frequency Operation
- Hard Switching & Higher Reliability
- Environmental Protection

**Key performance parameters**

Type	$V_R$	$I_F$ $T_C=150^\circ\text{C}$	$Q_C$
NJ04PSP065D	650V	4A	12.5

Caution: This device is sensitive to electrostatic discharge .Users should follow ESD handing procedures.

## Typical Characteristics

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### Maximum Ratings

$T_C=25^{\circ}\text{C}$ , unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$	650	V
Peak Reverse Surge Voltage	$V_{RSM}$	650	V
DC Blocking Voltage	$V_R$	650	V

### Maximum Ratings

$T_C=25^{\circ}\text{C}$ , unless otherwise specified

Parameter	Symbol	Value	Unit
Continuous Forward Current:  $T_C = 150^{\circ}\text{C}$	$I_F$	4A	A
Non Repetitive Forward Surge Current:  $T_C = 110^{\circ}\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	$I_{FSM}$	35	A
Repetitive peak Forward Surge Current:  $T_C = 25^{\circ}\text{C}$ , $t_p = 10\text{ms}$ , Half Sine Pulse	$I_{FRM}$	38	A
Total power dissipation: $T_C = 25^{\circ}\text{C}$	$P_D$	54	W
Operating Junction Temperature :	$T_j$	-55 to 175	$^{\circ}\text{C}$
Storage Temperature :	$T_{stg}$	-55 to 175	$^{\circ}\text{C}$

## Typical Characteristics

### Thermal Resistance

Parameter	Symbol	Typ.	Max	Unit
Thermal resistance	$R_{thJC}$	1.8		$^{\circ}C/W$

### Electrical Characteristic

$T_C = 25^{\circ}C$ , unless otherwise specified

Parameter	Symbol	Value			Unit	Test Condition
		Min.	Typ.	Max.		
DC Blocking Voltage	$V_{DC}$	650			V	$I_R = 250\mu A$ $T_j = 25^{\circ}C$
Forward Voltage	$V_F$		1.45 1.6 1.75	1.8	V	$I_F = 4A$ $T_j = 25^{\circ}C$ $T_j = 125^{\circ}C$ $T_j = 175^{\circ}C$
Reverse Current	$I_R$		7 38 108	80	$\mu A$	$V_R = 650V$ $T_j = 25^{\circ}C$ $T_j = 125^{\circ}C$ $T_j = 175^{\circ}C$
Total Capacitance Charge	$Q_C$		12.5		nC	$V_R = 400V$
Total Capacitance	C		230 33 24		pF	$V_R = 1V$ $V_R = 200V$ $V_R = 400V$ $T_j = 25^{\circ}C$ Freq = 1MHz

### Characteristics Curves

Figure 1. Forward Characteristics

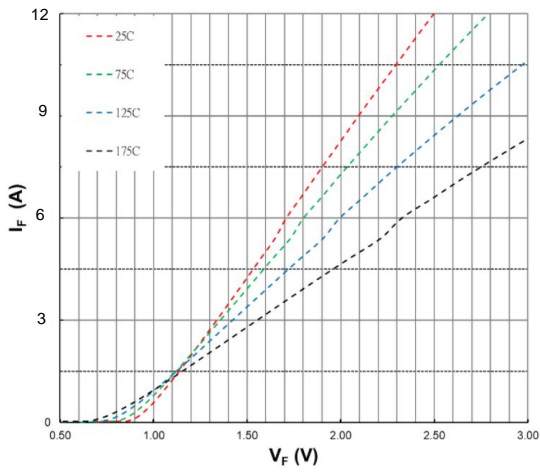


Figure 2. Forward Characteristics

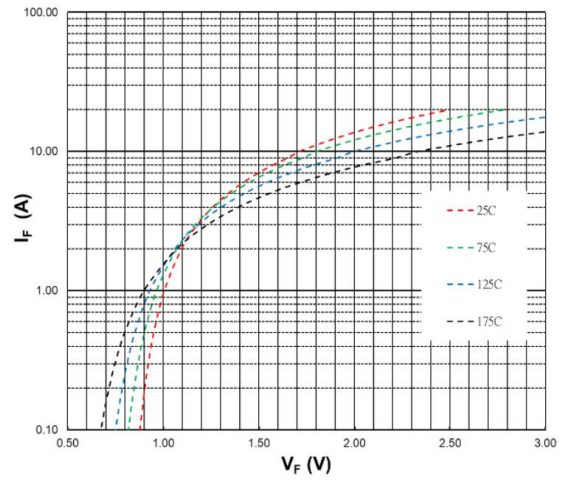


Figure 3. Reverse Characteristics

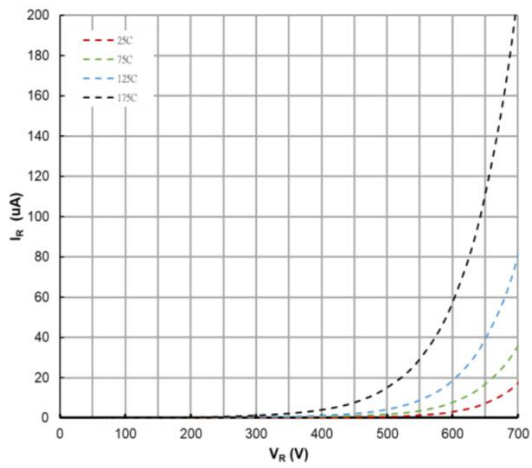


Figure 4. Power Derating

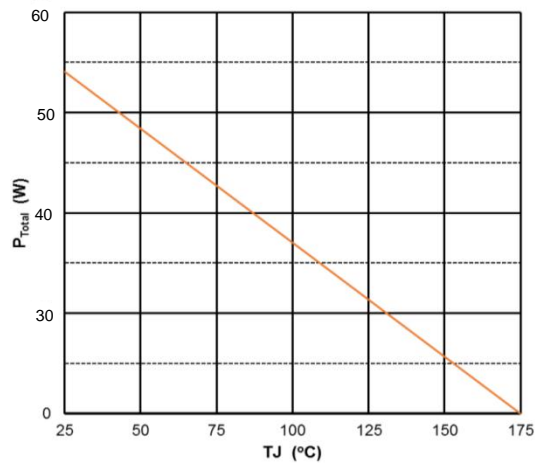


Figure 5. Capacitance vs Reverse Voltage

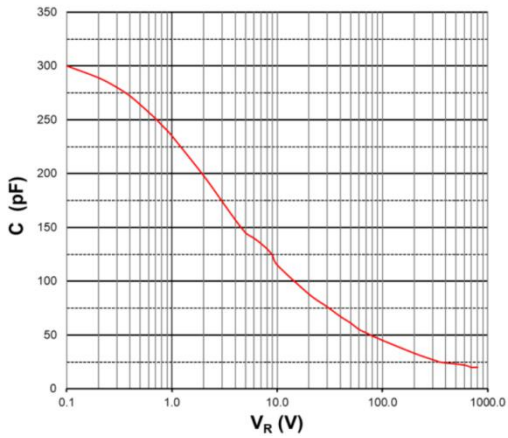
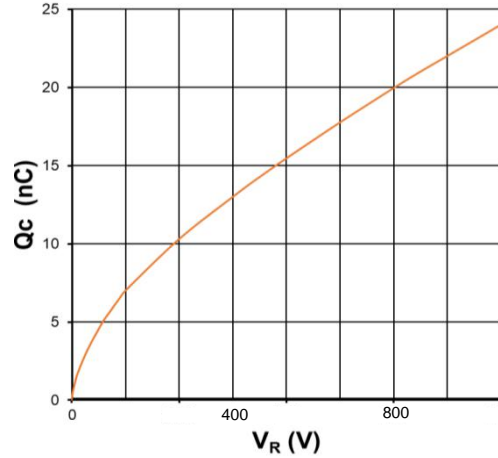
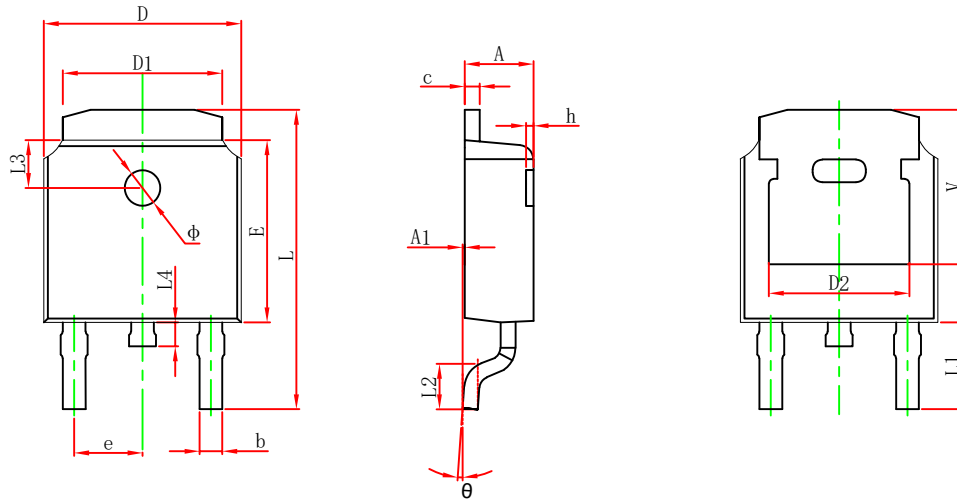


Figure 6. Recovery Charge vs Reverse Voltage

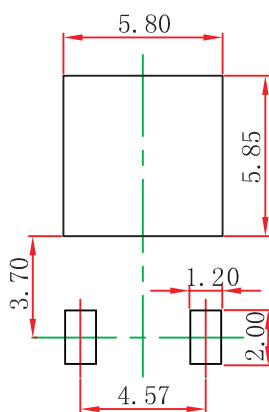


## TO-252-2L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.400	0.087	0.094
A1	0.000	0.127	0.000	0.005
b	0.635	0.770	0.025	0.030
c	0.460	0.580	0.018	0.023
D	6.500	6.700	0.256	0.264
D1	5.100	5.460	0.201	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.712	10.312	0.382	0.406
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
h	0.000	0.300	0.000	0.012
V	5.250 REF.		0.207 REF.	

## TO-252-2L Suggested Pad Layout

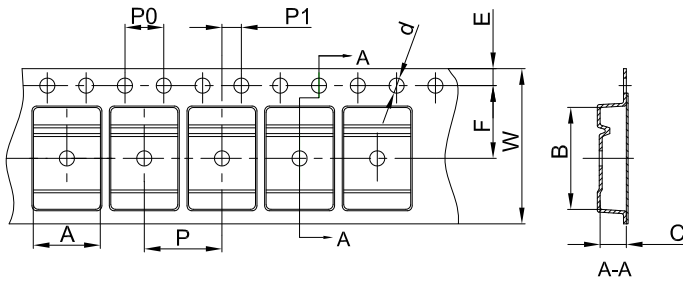


### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.

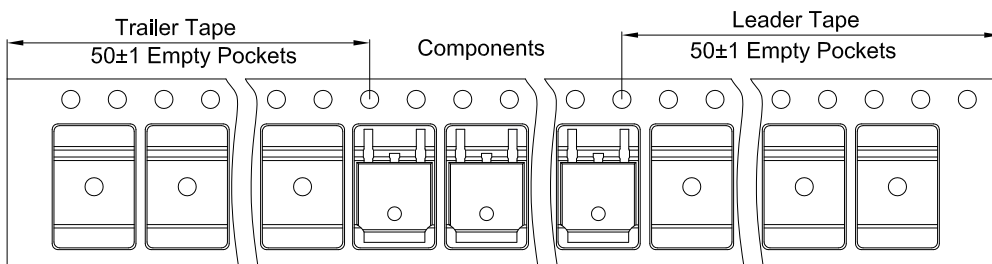
# TO-252-2L Tape and Reel

## TO-252 Embossed Carrier Tape

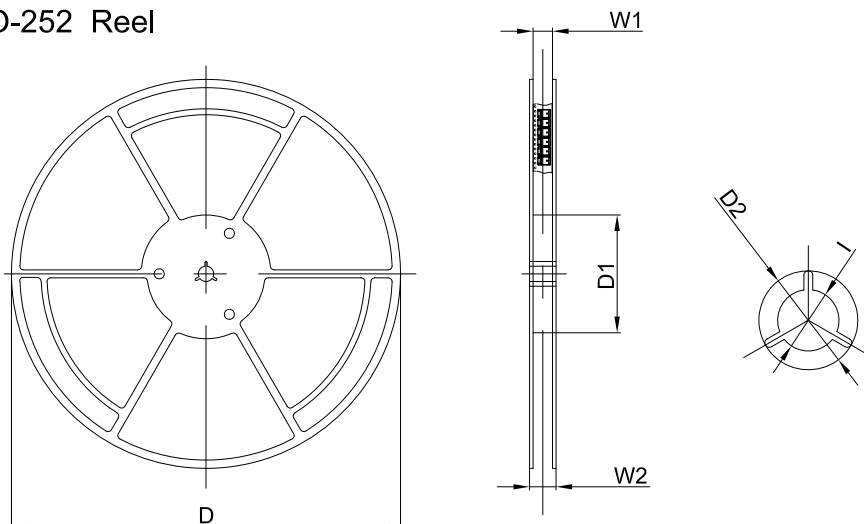


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
TO-252	6.90	10.50	2.70	Ø1.55	1.75	7.50	4.00	8.00	2.00	16.00

## TO-252 Tape Leader and Trailer



## TO-252 Reel



Dimensions are in millimeter						
Reel Option	D	D1	D2	W1	W2	I
13" Dia	330.00	100.00	Ø21.00	16.40	21.00	Ø13.00

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
2,500 pcs	13inch	2,500 pcs	340×336×29	25,000 pcs	353×346×365	