SHINDENGEN

Schottky Rectifiers (SBD)

Single

D1NS4

40V 1A

FEATURES

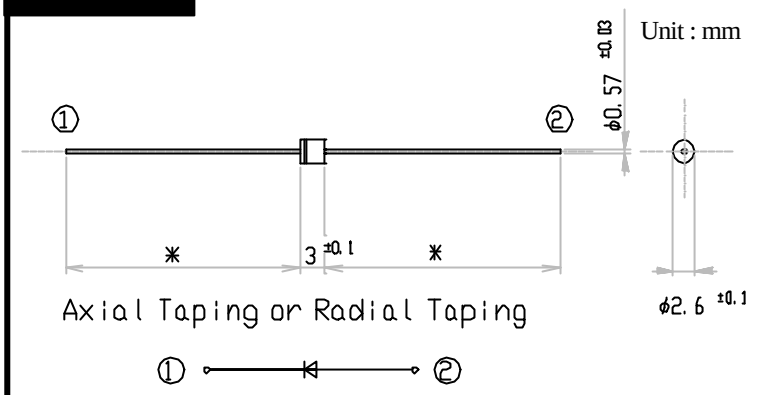
- Tj150°C
- P_{RRSM} avalanche guaranteed
- 5 mm pitch mounting applicable

APPLICATION

- Switching power supply
- DC/DC converter
- Home Appliances, Office Equipment
- Telecommunication

OUTLINE DIMENSIONS

Case : AX057



*Taping Code No.4000:20MIN
No.4060:27MIN
No.4070:15MIN

RATINGS

●Absolute Maximum Ratings (If not specified Tl=25°C)

Item	Symbol	Conditions	Ratings	Unit
Storage Temperature	Tstg		-55～150	°C
Operating Junction Temperature	Tj		150	°C
Maximum Reverse Voltage	V_{RM}		40	V
Repetitive Peak Surge Reverse Voltage	V_{RRSM}	Pulse width 0.5ms, duty 1/40	45	V
Average Rectified Forward Current	Io	50Hz sine wave, Ta=59°C	1	A
Peak Surge Forward Current	I_{FSM}	50Hz sine wave, Non-repetitive 1 cycle peak value, Tj=125 °C	30	A
Repetitive Peak Surge Reverse Power	P_{RRSM}	Pulse width 10μs, Tj=25°C	60	W

●Electrical Characteristics (If not specified Tl=25°C)

Item	Symbol	Conditions	Ratings	Unit
Forward Voltage	V_F	I_F=1A, Pulse measurement	Max.0.55	V
Reverse Current	I_R	V_R=40V, Pulse measurement	Max.0.8	mA
Junction Capacitance	Cj	f=1MHz, V_R=10V	Typ.50	pF
Thermal Resistance	θjl	junction to lead	Max.10	°C/W
	θja	junction to ambient, On P.C.B.	Max.113	

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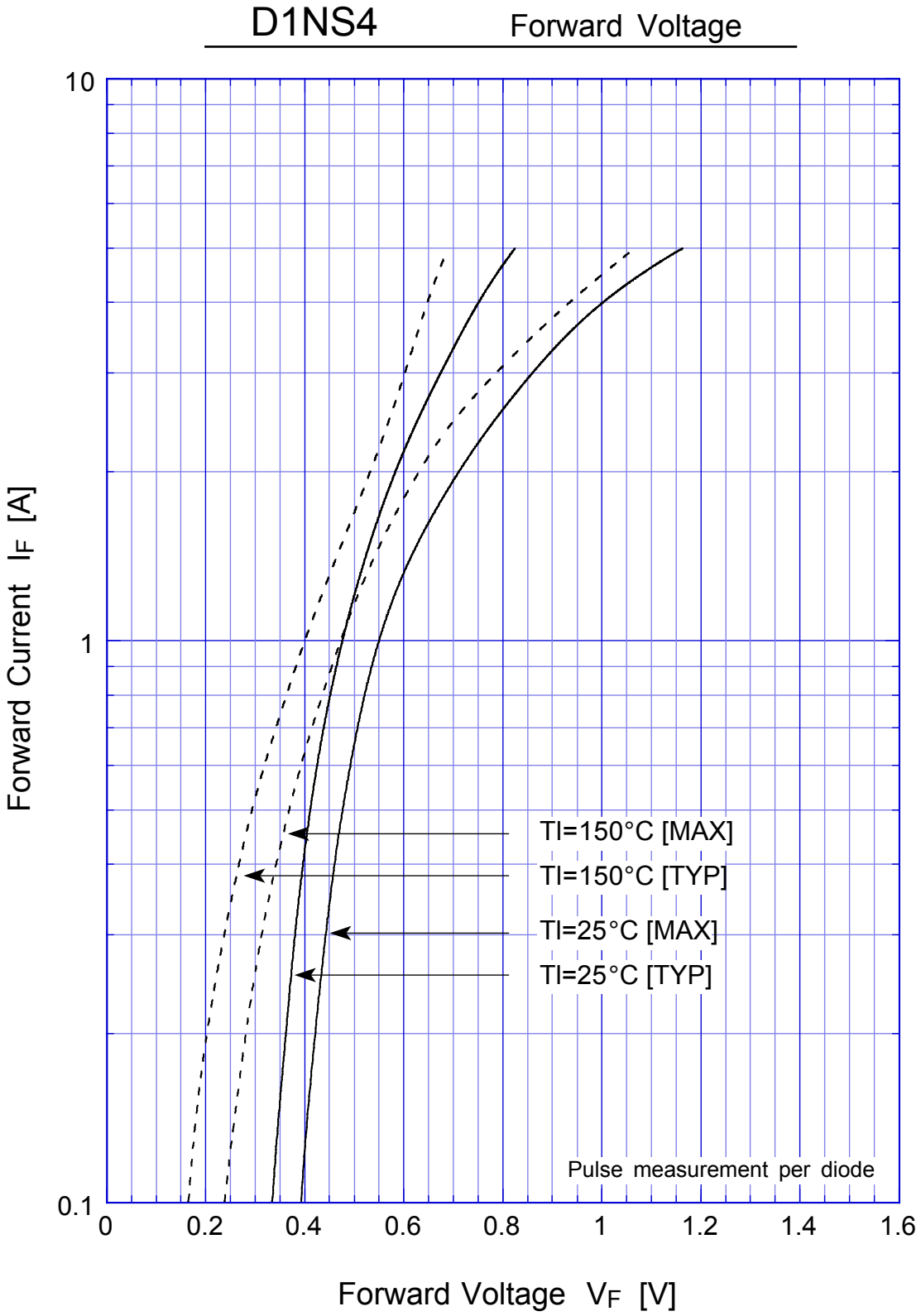
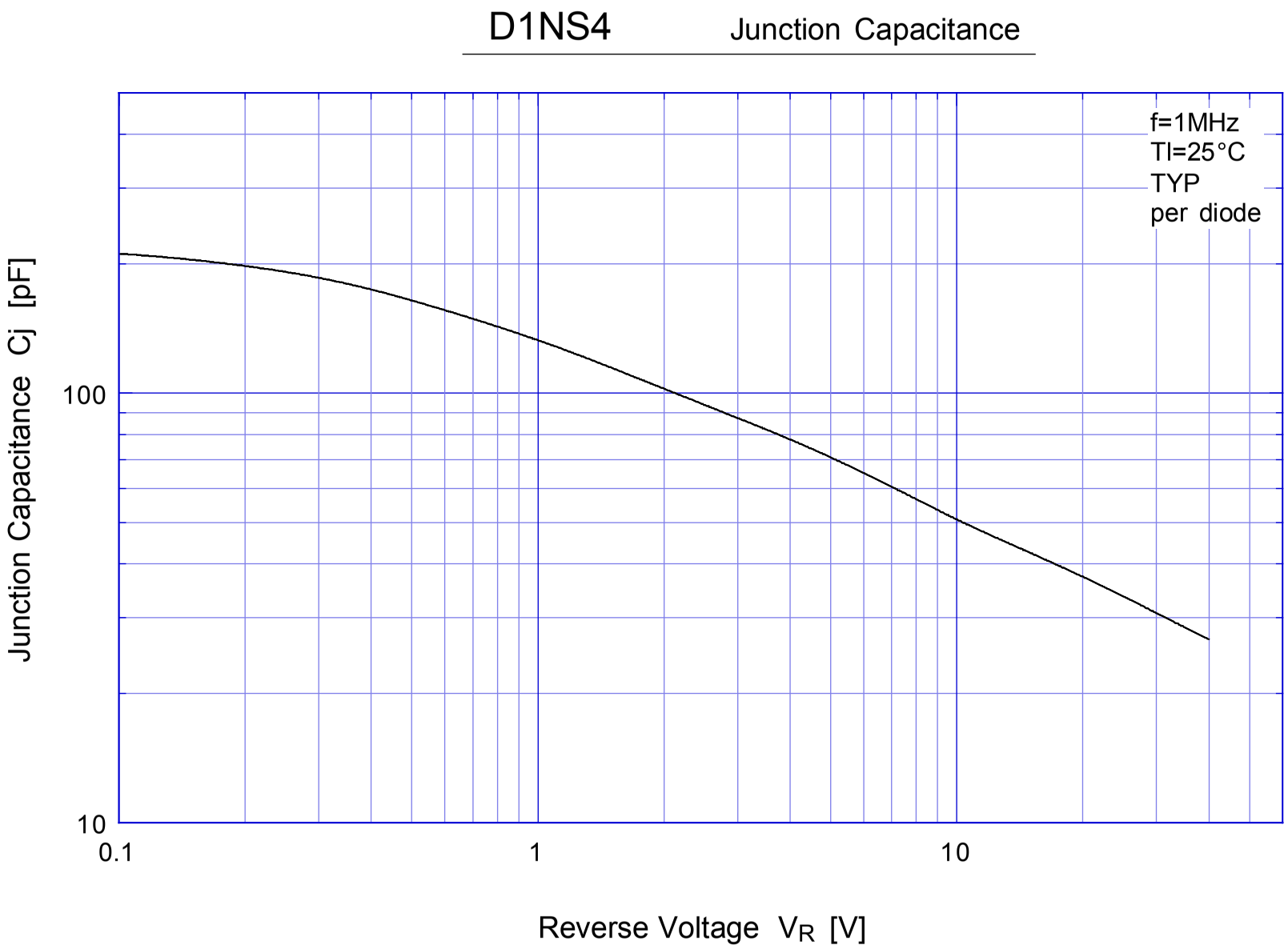
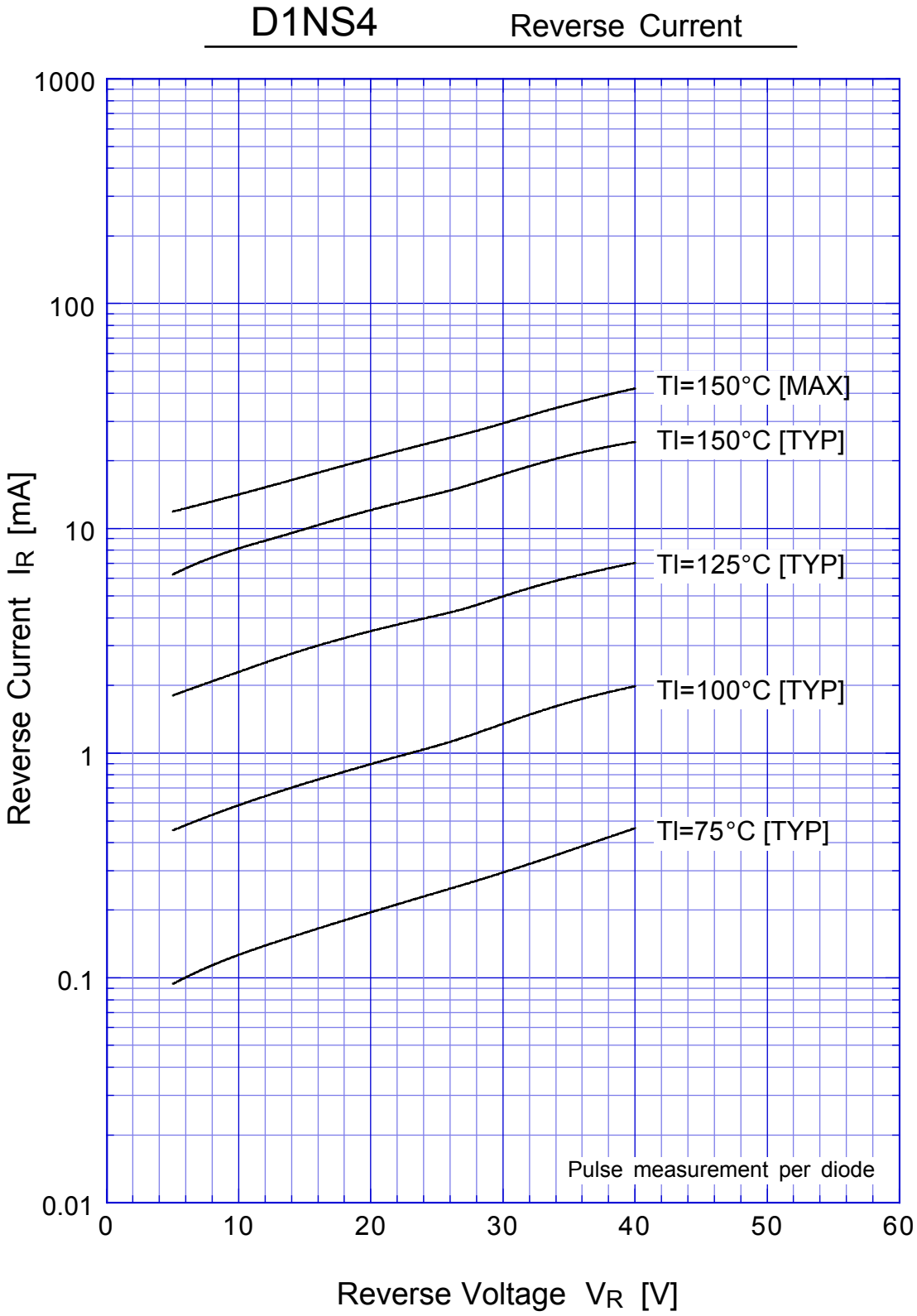
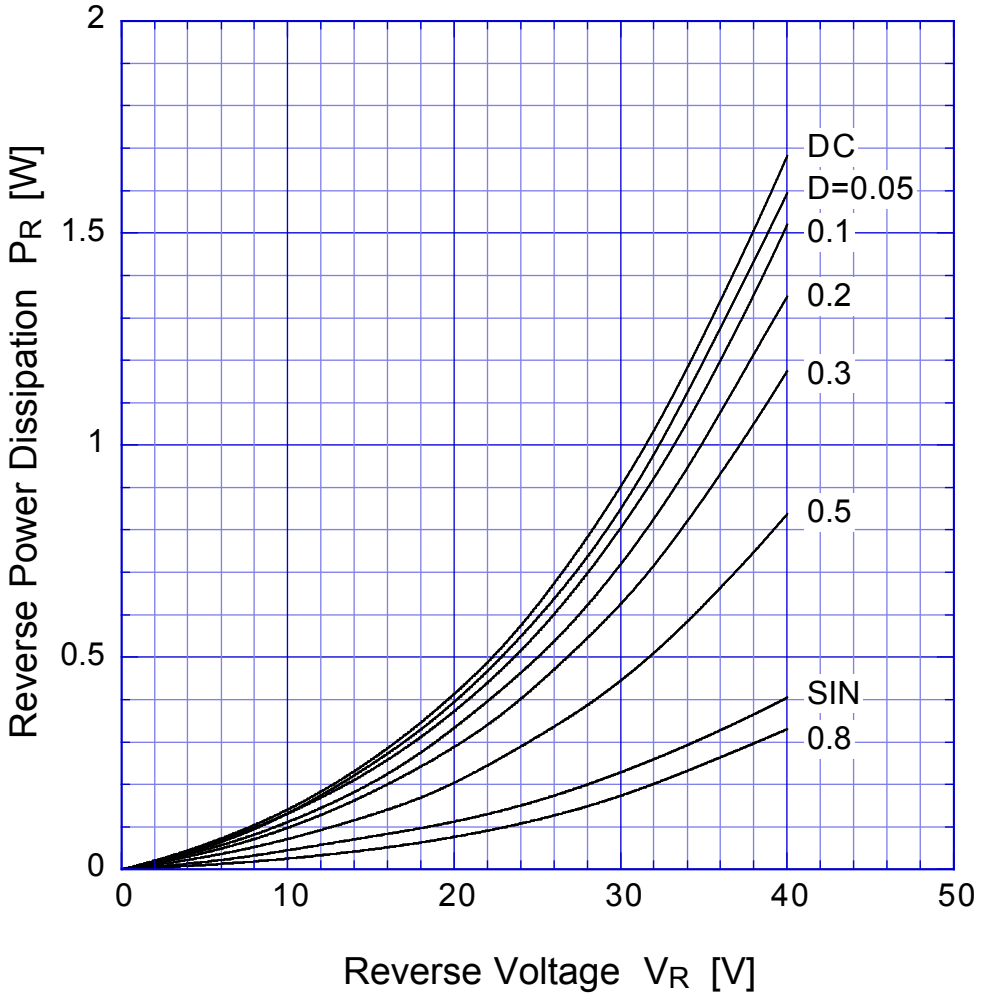

D1NS4
Forward Voltage
10
1
0.1
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
Forward Current IF [A]
Forward Voltage VF [V]
Tl=150°C [MAX]
Tl=150°C [TYP]
Tl=25°C [MAX]
Tl=25°C [TYP]
Pulse measurement per diode

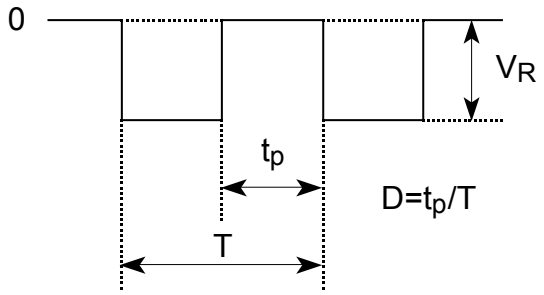

D1NS4
Junction Capacitance
f=1MHz
Tl=25°C
TYP
per diode
Junction Capacitance Cj [pF]
100
10
0.1
1
10
Reverse Voltage VR [V]


D1NS4
Reverse Current
1000
100
10
1
0.1
0.01
Reverse Current IR [mA]
0
10
20
30
40
50
60
Reverse Voltage VR [V]
Tl=150°C [MAX]
Tl=150°C [TYP]
Tl=125°C [TYP]
Tl=100°C [TYP]
Tl=75°C [TYP]
Pulse measurement per diode

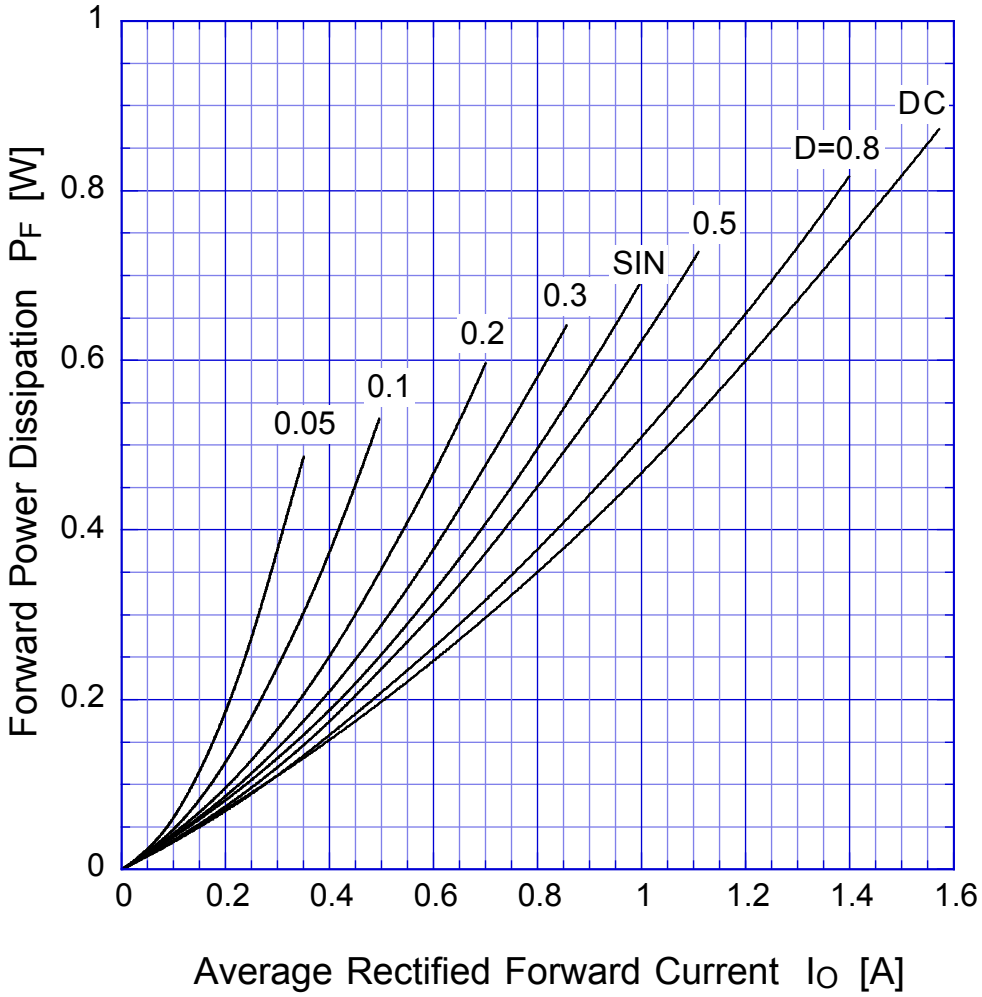
D1NS4 Reverse Power Dissipation



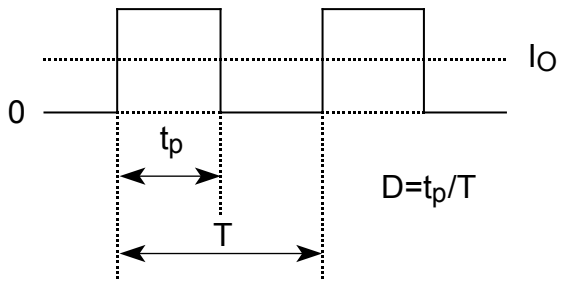
Tj = 150°C

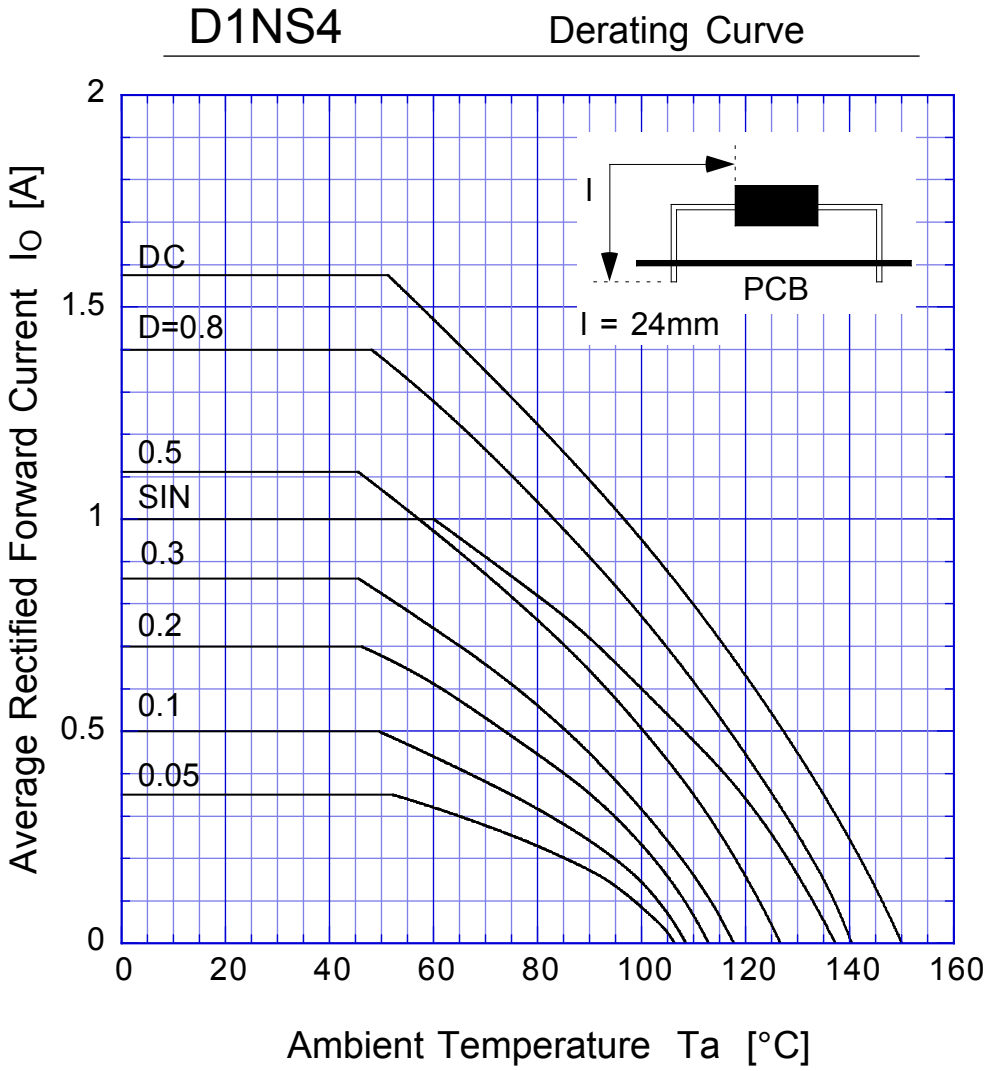


D1NS4 Forward Power Dissipation

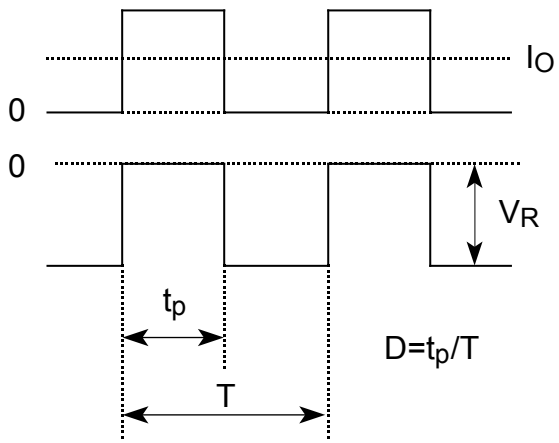


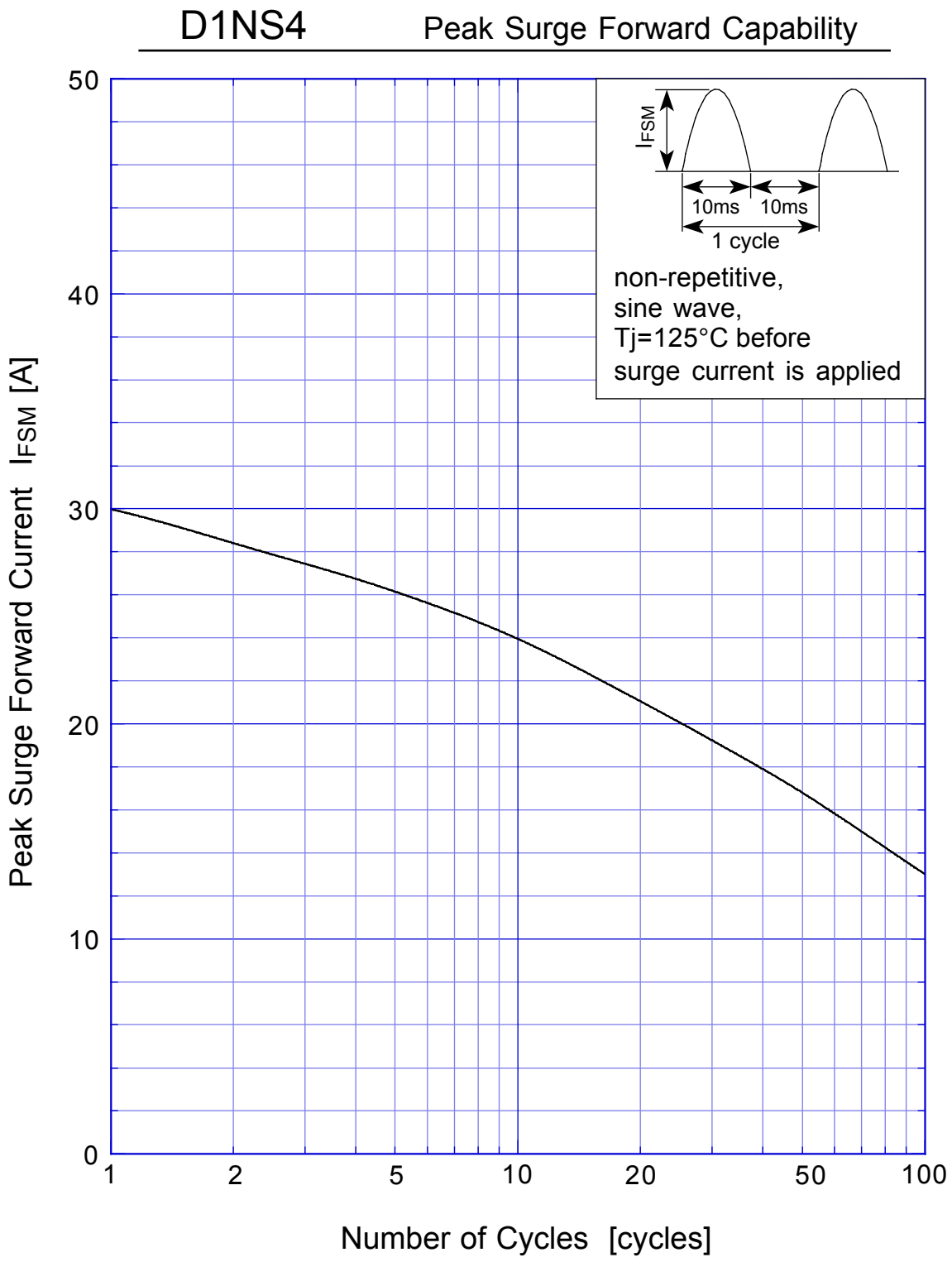
Tj = 150°C



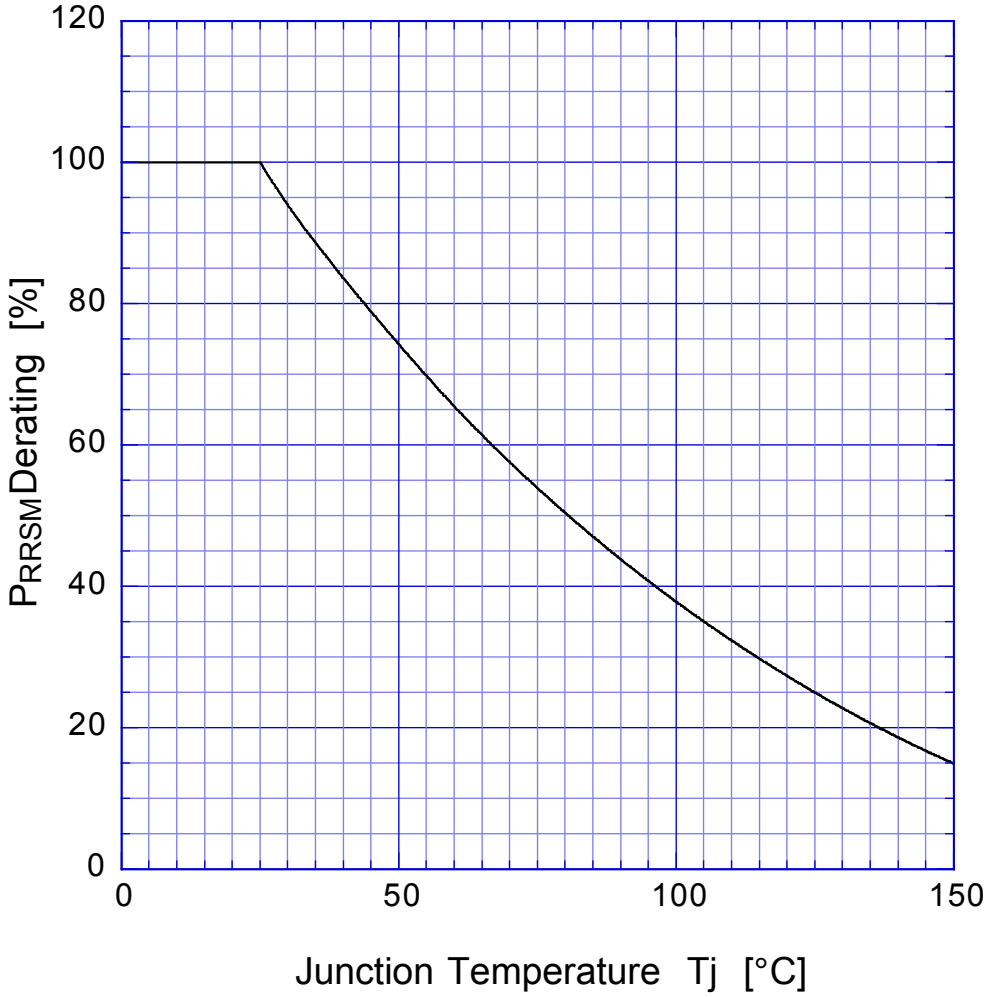

D1NS4
Derating Curve
Average Rectified Forward Current IO [A]
Ambient Temperature Ta [°C]
DC
D=0.8
0.5
SIN
0.3
0.2
0.1
0.05
l
PCB
l = 24mm
0
0.5
1
1.5
2
0
20
40
60
80
100
120
140
160

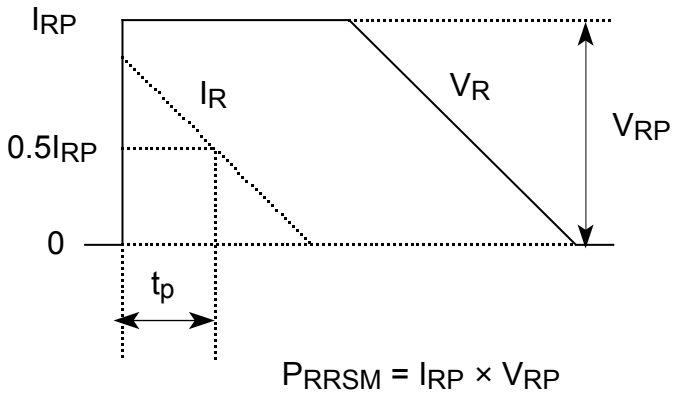
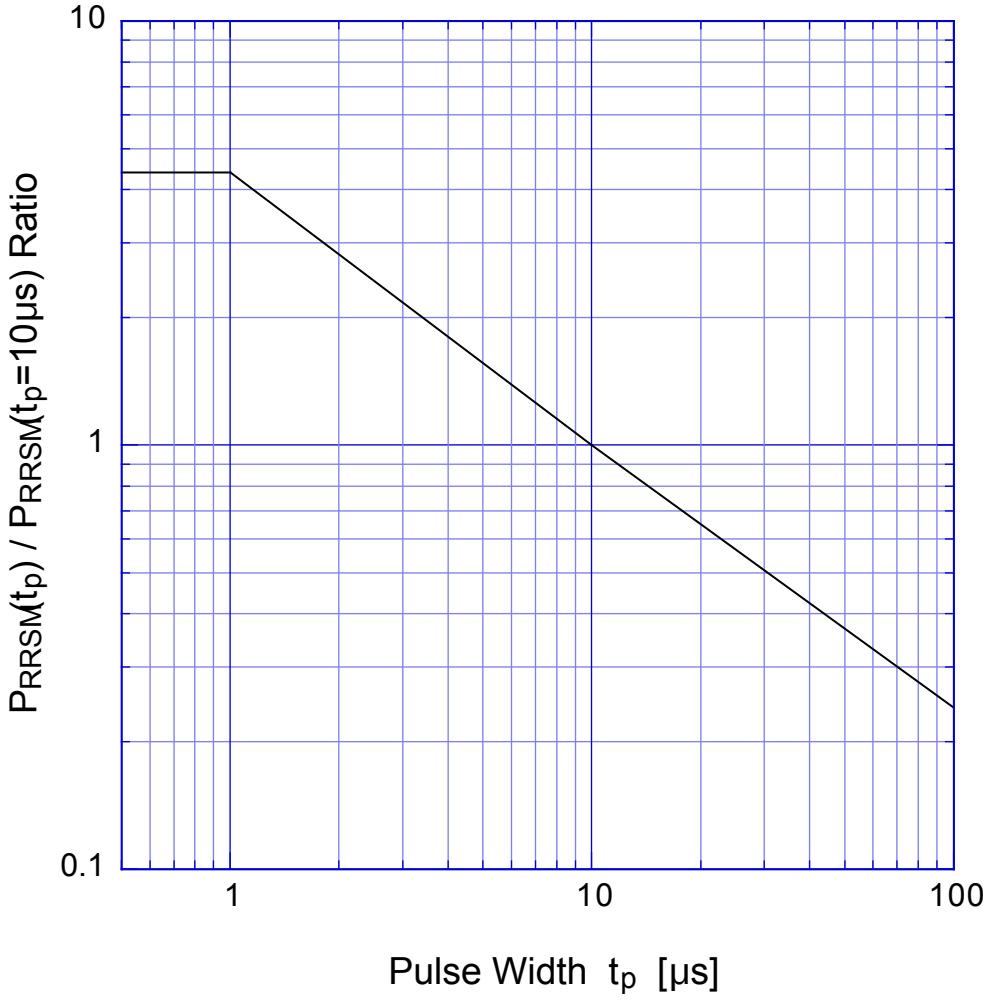
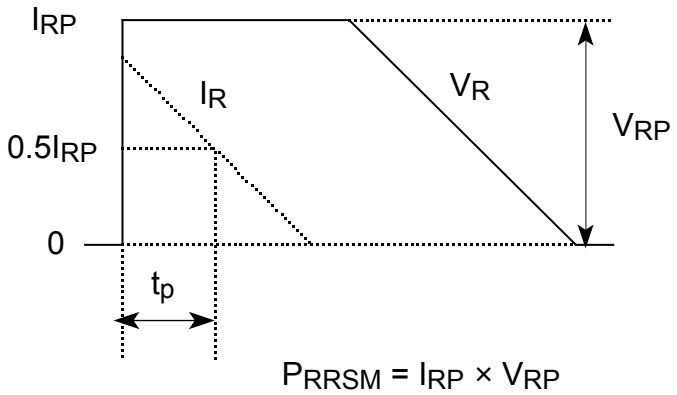
V_R = 20V


IO
0
0
VR
tp
T
D=tp/T


D1NS4
Peak Surge Forward Capability
Peak Surge Forward Current IFSM [A]
Number of Cycles [cycles]
0
10
20
30
40
50
1
2
5
10
20
50
100
IFSM
10ms
10ms
1 cycle
non-repetitive,
sine wave,
Tj=125°C before
surge current is applied

SBD Repetitive Surge Reverse Power Derating Curve





SBD Repetitive Surge Reverse Power Capability