

Features

- AEC-Q101 qualified
- Low on resistance
- Low reverse transfer capacitances
- 100% single pulse avalanche energy test
- 100% ΔV_{DS} test
- Pb-Free plating / Halogen-Free / RoHS compliant

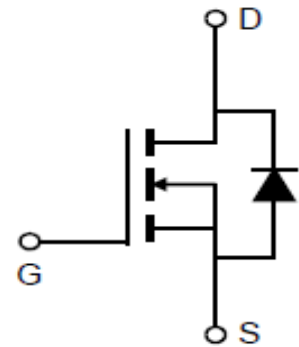
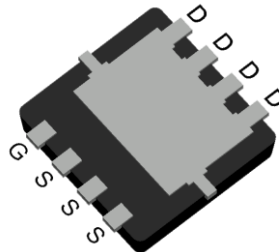
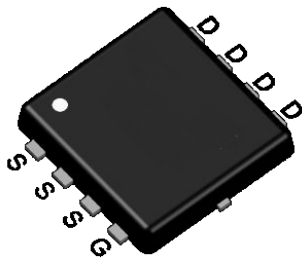
Key Parameters

V_{DS}	100V
$R_{DS(on)typ.}$	8mΩ
I_D	50A
$C_{iss@10V}$	1700pF
Q_{gd}	7nC

Applications

- Power switching applications
- DC-DC converters
- Full bridge control

DFN3*3-8



Marking & Packing Information

Part #	Package	Marking	Tube/Reel	Qty(pcs)
PXN012-100QSJ-CN	DFN3*3-8	CT8RN10M	Tape & Reel	3000/reel

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	100	V
Gate-Source voltage	V_{GS}	±20	V
Continuous drain current $T_C = 25^\circ\text{C}$ $T_C = 100^\circ\text{C}$	I_D	50 35	A
Pulsed drain current ($T_C = 25^\circ\text{C}$, t_p limited by T_{jmax})	$I_{D\ pulse}$	198	A
Avalanche energy, single pulse ($L=0.5\text{mH}$, $R_g=25\Omega$) ^[1]	E_{AS}	144	mJ
Power dissipation $T_C = 25^\circ\text{C}$	P_{tot}	47	W
Operating junction and storage temperature	T_j, T_{stg}	-55...+175	°C

Notes:1.EAS was tested at $T_j = 25^\circ\text{C}$, $L = 0.5\text{mH}$, $I_d=17\text{A}$.

Thermal Resistance

Parameter	Symbol	Max	Unit
Thermal resistance, junction – case.	R_{thJC}	3.2	°C/W

Electrical Characteristic (at $T_j = 25^\circ\text{C}$, unless otherwise specified)
Static Characteristic

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Drain-source breakdown voltage	BV_{DSS}	100	-	-	V	$V_{GS}=0\text{V}$, $I_D=250\mu\text{A}$
Gate threshold voltage	$V_{GS(th)}$	1.3	-	2.3	V	$V_{DS}=V_{GS}$, $I_D=250\mu\text{A}$
Zero gate voltage drain current	I_{DSS}	-	-	1	μA	$V_{DS}=100\text{V}$, $V_{GS}=0\text{V}$ $T_j=25^\circ\text{C}$
		-	-	100		$T_j=125^\circ\text{C}$
Gate-source leakage current	I_{GSS}	-	-	100	nA	$V_{GS}=20\text{V}$, $V_{DS}=0\text{V}$
Drain-source on-state resistance	$R_{DS(on)}$	-	8	9.5	mΩ	$T_j=25^\circ\text{C}$ $V_{GS}=10\text{V}$, $I_D=30\text{A}$
		-	11	13.5		$V_{GS}=4.5\text{V}$, $I_D=30\text{A}$

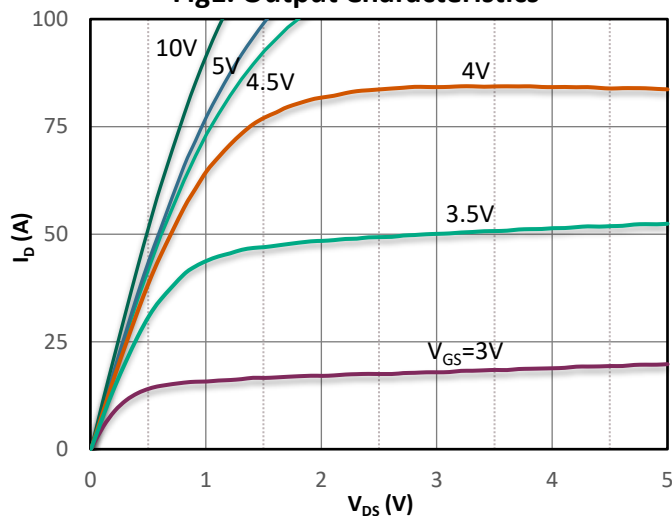
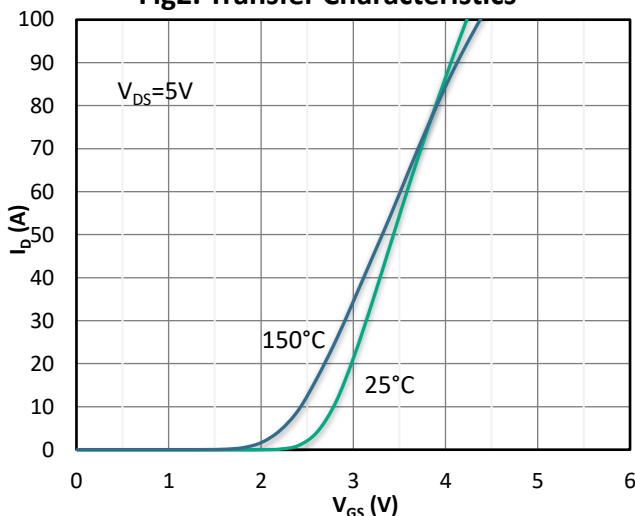
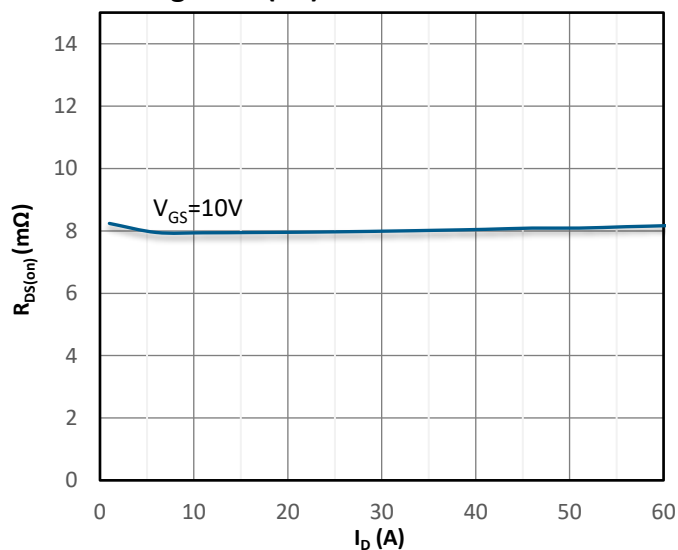
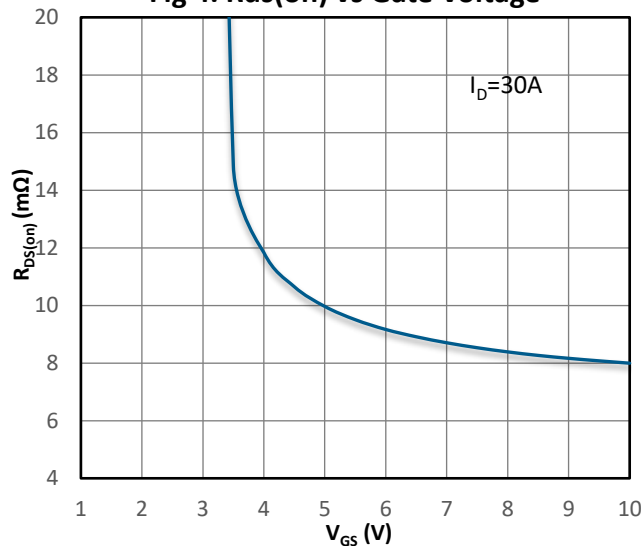
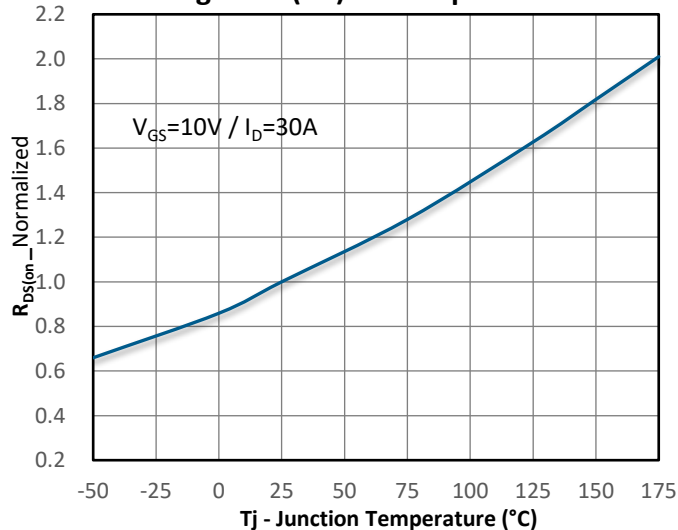
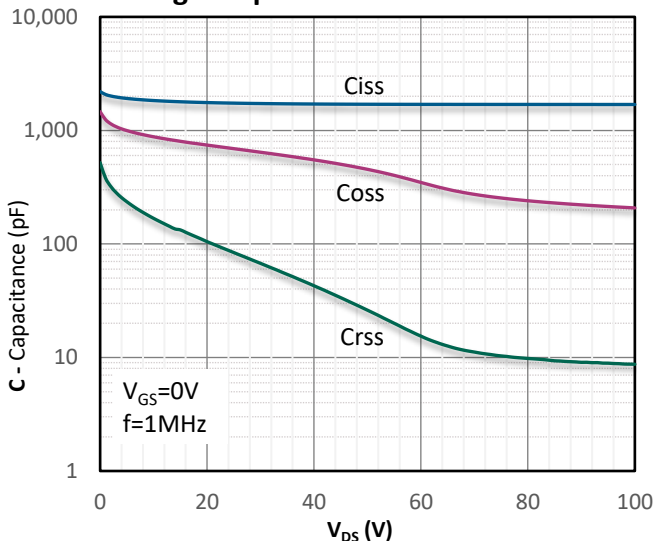
Dynamic Characteristic

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Input Capacitance	C_{iss}	-	1700	-	pF	$V_{GS}=0V, V_{DS}=50V,$ $f=1MHz$
Output Capacitance	C_{oss}	-	454	-		
Reverse Transfer Capacitance	C_{rss}	-	26	-		
Gate Total Charge	Q_G	-	31	-	nC	$V_{GS}=10V, V_{DS}=50V,$ $I_D=30A$
Gate-Source charge	Q_{gs}	-	6	-		
Gate-Drain charge	Q_{gd}	-	7	-		
Turn-on delay time	$t_{d(on)}$	-	8	-	ns	$V_{GS}=10V, V_{DD}=50V,$ $I_D=30A, R_{G_ext}=3\Omega$
Rise time	t_r	-	23	-		
Turn-off delay time	$t_{d(off)}$	-	26	-		
Fall time	t_f	-	8	-		

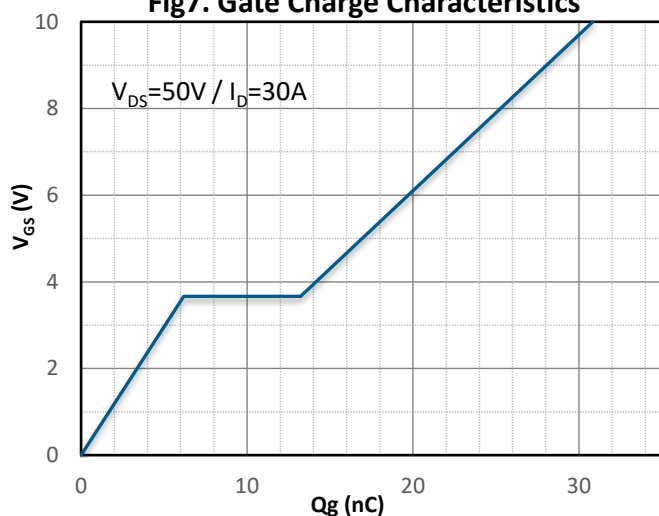
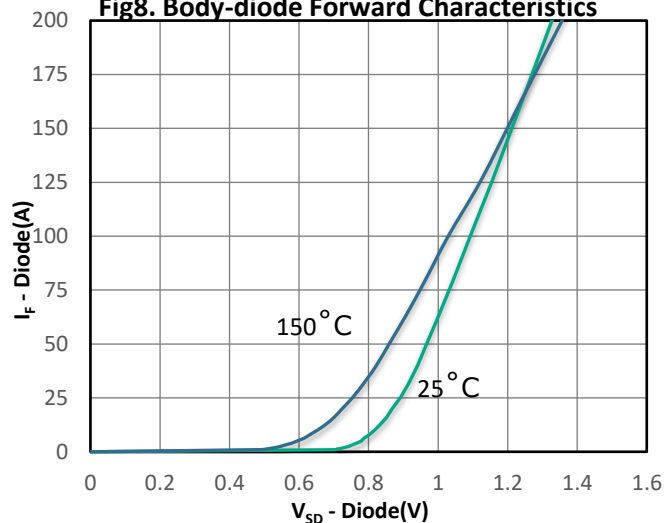
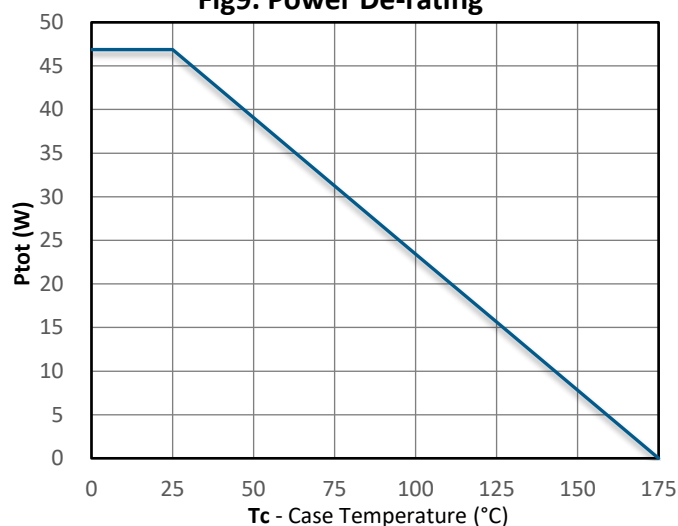
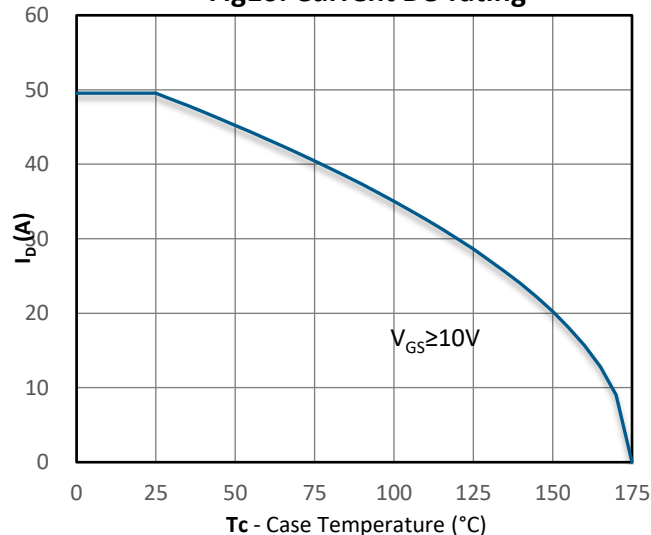
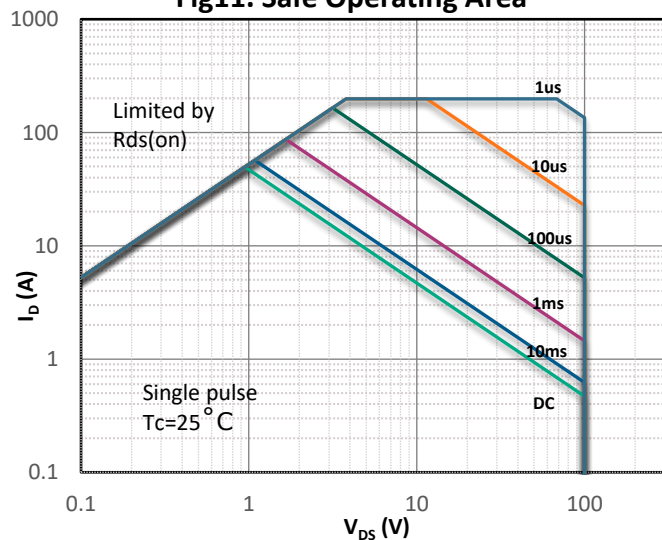
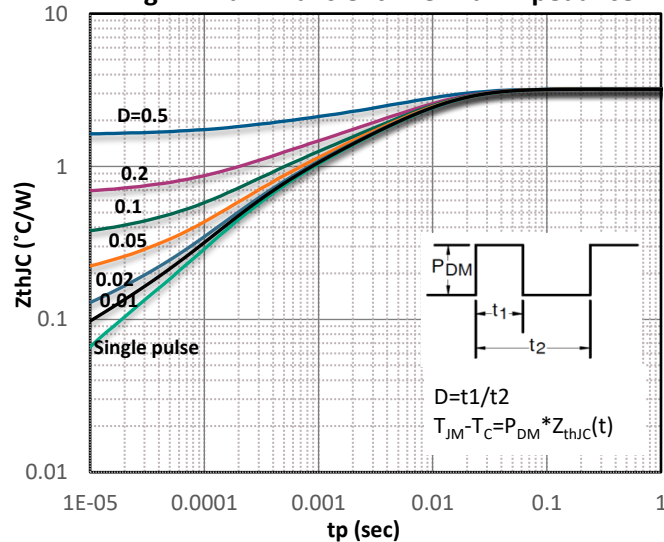
Body Diode Characteristic

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Diode Max Current	I_S		-	50	A	-
Diode Forward Voltage	V_{SD}	-	-	1.2	V	$V_{GS}=0V, I_{SD}=30A$
Diode Reverse Recovery Time	t_{rr}	-	48	-	ns	$I_F=30A,$ $dI/dt=100A/\mu s$
Diode Reverse Recovery Charge	Q_{rr}	-	76	-	nC	

Typical Characteristics Diagram

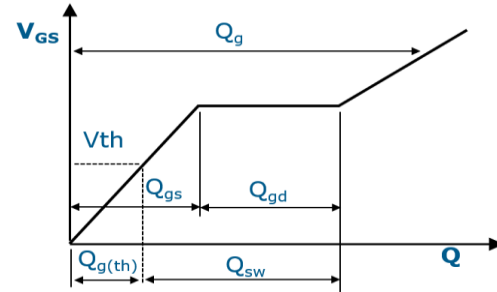
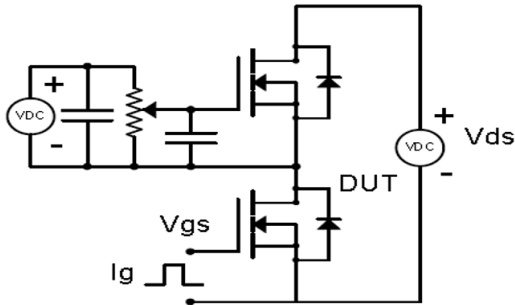
Fig1. Output Characteristics

Fig2. Transfer Characteristics

Fig3. Rds(on) vs Drain Current

Fig 4. Rds(on) vs Gate Voltage

Fig5. Rds(on) vs. Temperature

Fig6. Capacitance Characteristics


Typical Characteristics Diagram

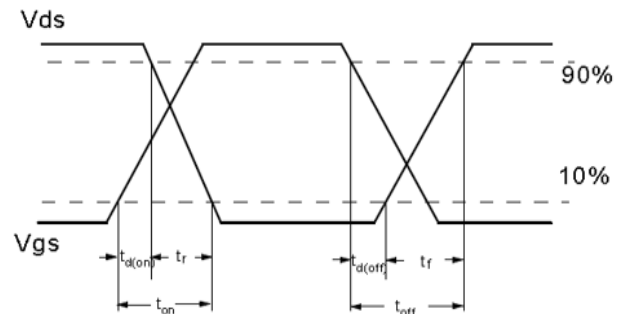
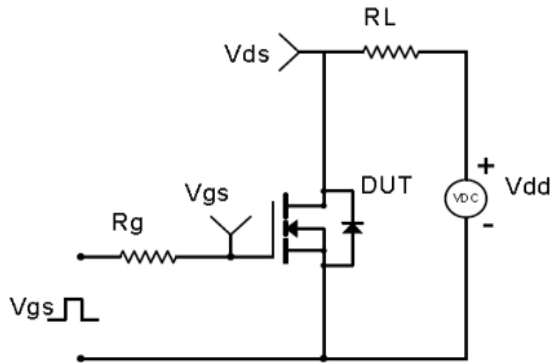
Fig7. Gate Charge Characteristics

Fig8. Body-diode Forward Characteristics

Fig9. Power De-rating

Fig10. Current De-rating

Fig11. Safe Operating Area

Fig12. Max. Transient Thermal Impedance


Test Circuit & Waveform

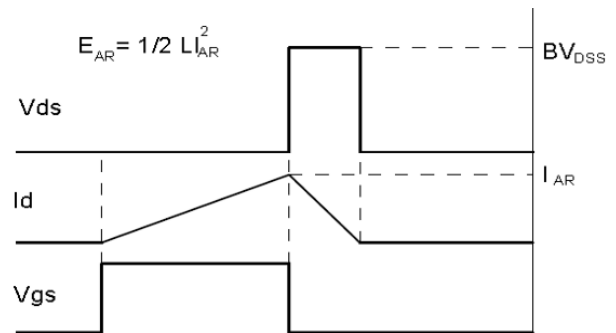
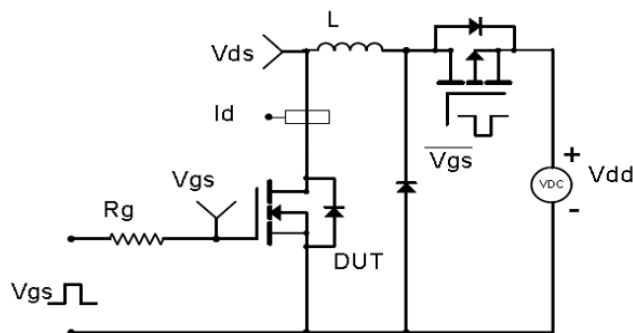
Gate Charge Test Circuit & Waveform



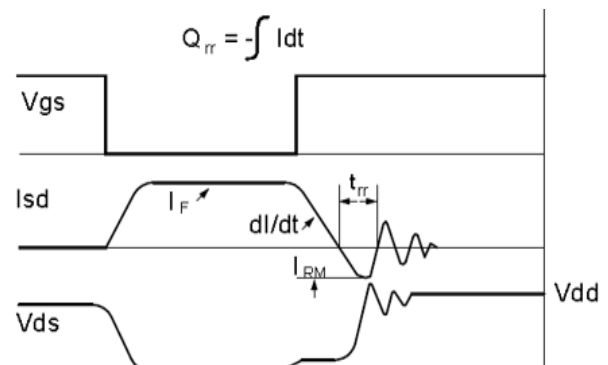
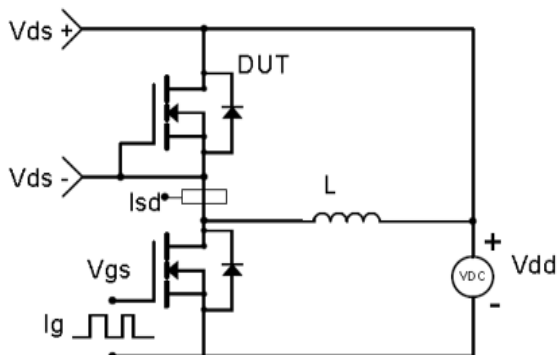
MOSFET Switching Test Circuit & Waveform



E_{AS} Test Circuit & Waveform

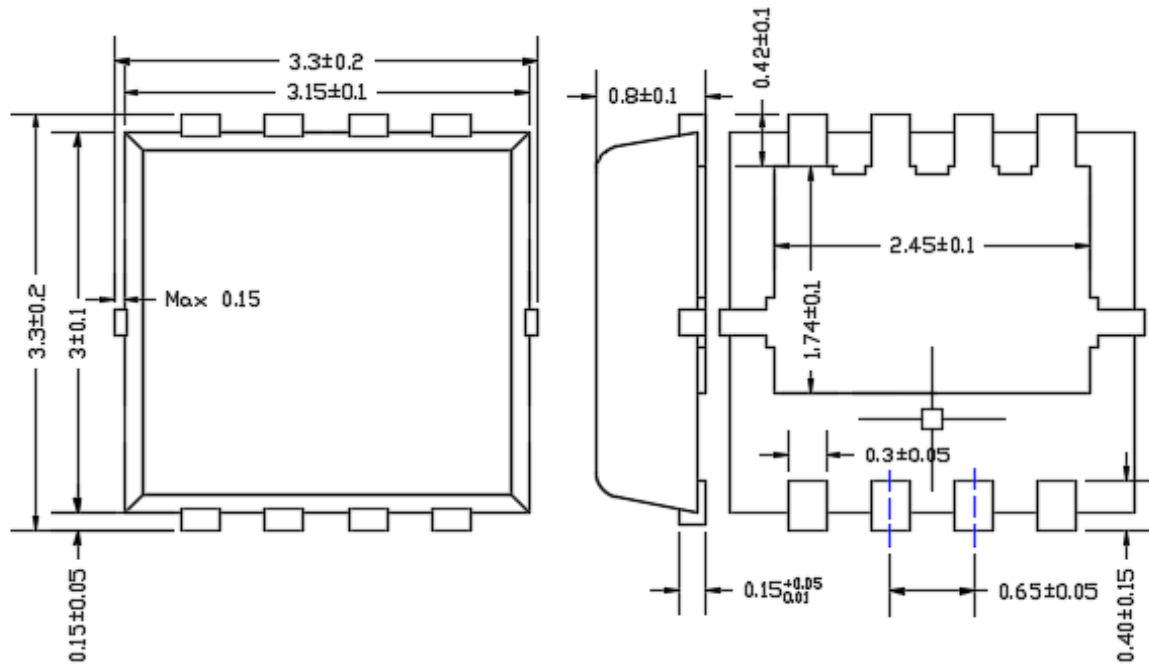


Diode Recovery Test Circuit & Waveform



Package Outline : DFN3*3-8

*Dimensions in mm



NOTICE

The information presented in this document is for reference only. Involving product optimization and productivity improvement, ChipNobo reserves the right to adjust product indicators and upgrade some technical parameters. ChipNobo is entitled to be exempted from liability for any delay or non-delivery of the information disclosure process that occurs.

本文件中提供的信息仅供参考。涉及产品优化和生产效率改善，ChipNobo 有权调整产品指标和部分技术参数的升级，所出现信息披露过程存在延后或者不能送达的情形，ChipNobo 有获免责权。

The product listed herein is designed to be used with residential and commercial equipment, and do not support sensitive items and specialized equipment in areas where sanctions do exist. ChipNobo Co., Ltd or anyone on its behalf, assumes no responsibility or liability for any damages resulting from improper use.

此处列出的产品旨在民用和商业设备上使用，不支持确有制裁地区的敏感项目和特殊设备，ChipNobo 有限公司或其代表，对因不当使用而造成的任何损害不承担任何责任。

For additional information, please visit our website <http://www.chipnobo.com>, or consult your nearest Chipnobo sales office for further assistance.

欲了解更多信息，请访问我们的网站 <http://www.chipnobo.com>，或咨询离您最近的 Chipnobo 销售办事处以获得进一步帮助。