Features

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

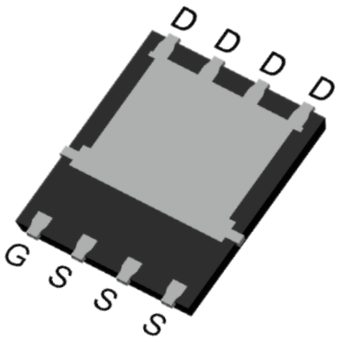
Key Parameters

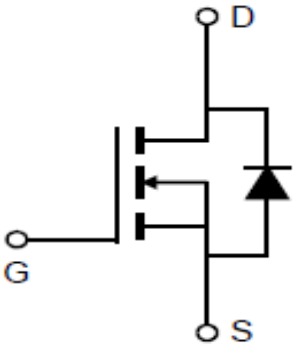
V_{DS}	40V
$R_{DS(on)typ.}$	2.4mΩ
I_D (Silicon limit)	122A
I_D (Package limit)	80A
Vth	3V
$Ciss_{@10V}$	4655pF
Qgd	14.4nC

Applications

- Motor Control and Drive
- Charge/Discharge for Battery Management System
- Synchronous Rectifier for SMPS

DFN5*6





Marking & Packing Information

Part #	Package	Marking	Tube/Reel	Qty(pcs)
SQJ422EP-T1_GE3-CN	DFN5*6	027N04NA	Reel	3000/box

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Drain-source voltage	V_{DS}	40	V
Gate-Source voltage	V_{GS}	±20	V
Continuous drain current T_C = 25°C (Silicon limit) T_C = 25°C(Package limit) T_C = 100°C (Package limit)	I_D	 122 80 80	A
Pulsed drain current (T_C = 25°C, t_p limited by T_{jmax})	$I_{D\ pulse}$	487	A
Avalanche energy, single pulse (L=0.5mH, Rg=25Ω)	E_{AS}	529	mJ
Power dissipation (T_C = 25°C)	P_{tot}	71	W
Operating junction and storage temperature	T_j , T_{stg}	-55...+175	°C

Thermal Resistance

Parameter	Symbol	Max	Unit
Thermal resistance, junction – case.	R_{thJC}	2.10	°C/W
Thermal resistance, junction – ambient(min. footprint)	R_{thJA}	75	

Electrical Characteristic (at Tj = 25 °C, unless otherwise specified)

Static Characteristic

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Drain-source breakdown voltage	BV_{DSS}	40	-	-	V	V_{GS}=0V, I_D=250uA
Gate threshold voltage	$V_{GS(th)}$	2.0	3.0	4.0	V	V_{DS}=V_{GS},I_D=250uA
Zero gate voltage drain current	I_{DSS}	- -	- -	1 100	μA	V_{DS}=40V,V_{GS}=0V T_j=25°C T_j=125°C
Gate-source leakage current	I_{GSS}	-	-	100	nA	V_{GS}=20V,V_{DS}=0V
Drain-source on-state resistance	$R_{DS(on)}$	-	2.4	2.75	mΩ	V_{GS}=10V, I_D=60A, Tj=25°C

Dynamic Characteristic

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Input Capacitance	C_{iss}	-	4655	-	pF	V_{GS}=0V, V_{DS}=20V, f=1MHz
Output Capacitance	C_{oss}	-	494	-		
Reverse Transfer Capacitance	C_{rss}	-	391	-		
Gate Total Charge	Q_G	-	73	-	nC	V_{GS}=10V, V_{DS}=20V, I_D=50A, f=1MHz
Gate-Source charge	Q_{gs}	-	30	-		
Gate-Drain charge	Q_{gd}	-	14.4	-		
Turn-on delay time	$t_{d(on)}$	-	14	-	ns	V_{GS}=10V, V_{DD}=20V, R_{G_ext}=3Ω
Rise time	t_r	-	48	-		
Turn-off delay time	$t_{d(off)}$	-	34	-		
Fall time	t_f	-	18	-		
Gate resistance	R_G	-	2.8	-	Ω	V_{GS}=0V, V_{DS}=0V, f=1MHz

Body Diode Characteristic

Parameter	Symbol	Value			Unit	Test Condition
		min.	typ.	max.		
Diode Max Current	I_S		-	80	A	-
Diode Forward Voltage	V_{SD}	-	-	1.2	V	V_{GS}=0V,I_{SD}=60A
Diode Reverse Recovery Time	t_{rr}	-	21	-	ns	I_F=50A, dI/dt=100A/μs
Diode Reverse Recovery Charge	Q_{rr}	-	8	-	nC	

Typical Characteristics Diagram

Fig1. Output Characteristics

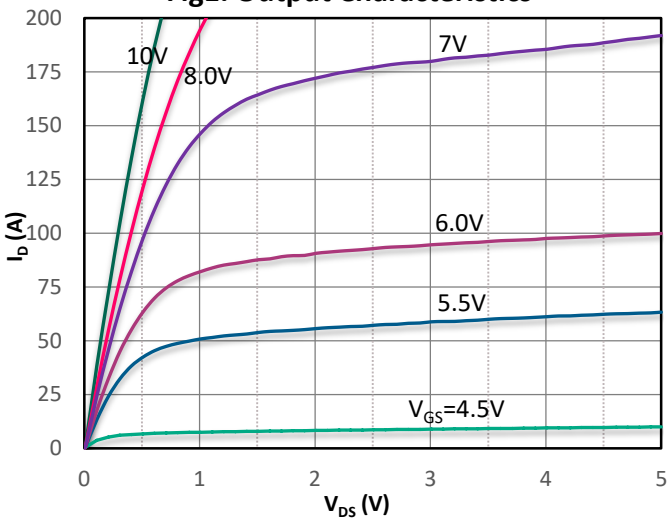


Fig2. Transfer Characteristics

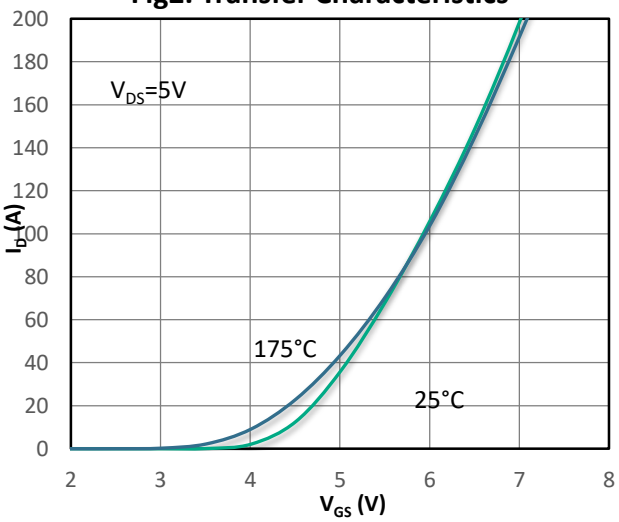


Fig3. Rds(on) vs Drain Current

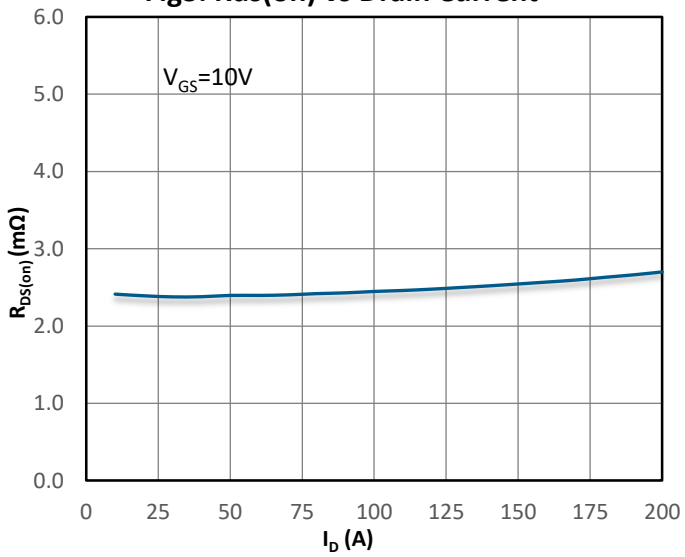


Fig 4. Rds(on) vs Gate Voltage

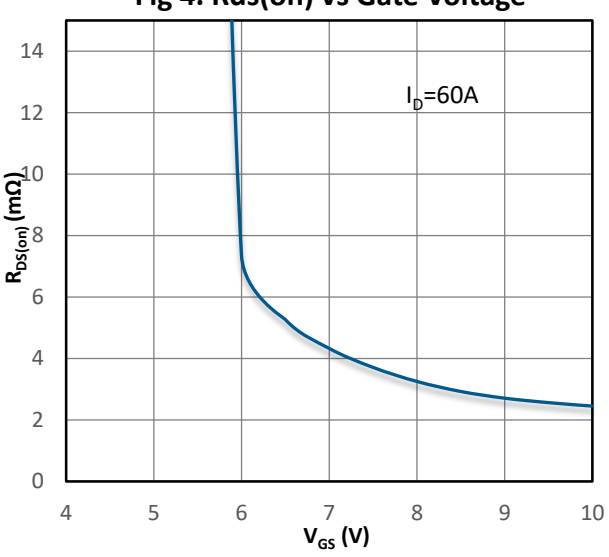


Fig5. Rds(on) vs. Temperature

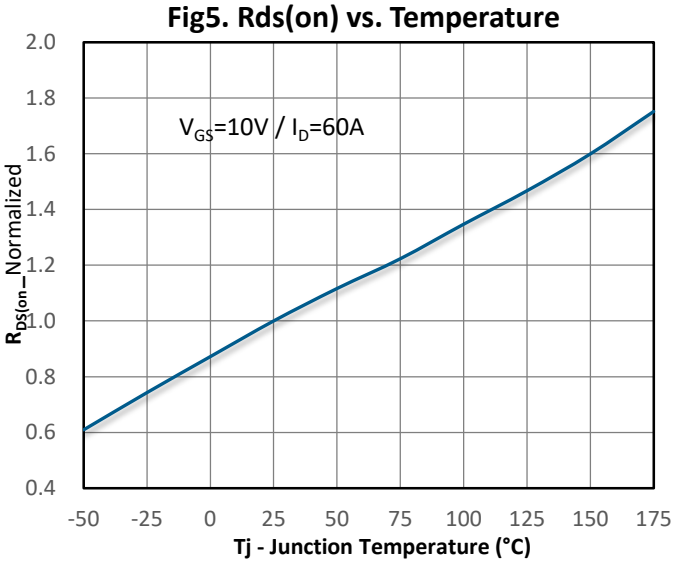
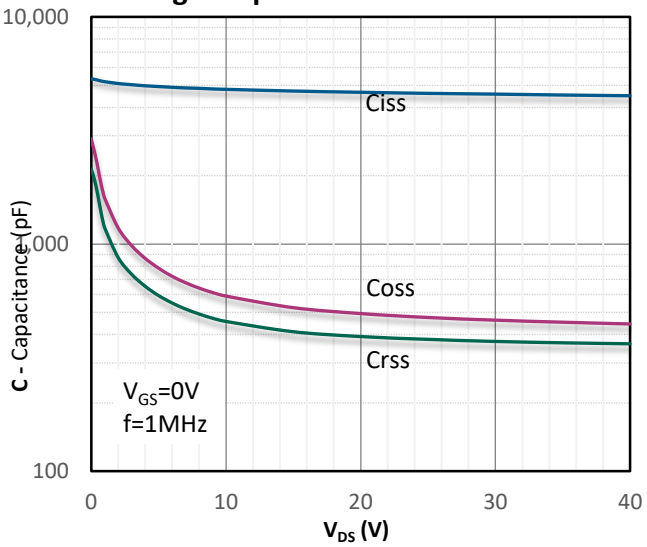


Fig6. Capacitance Characteristics



Typical Characteristics Diagram

Fig7. Gate Charge Characteristics

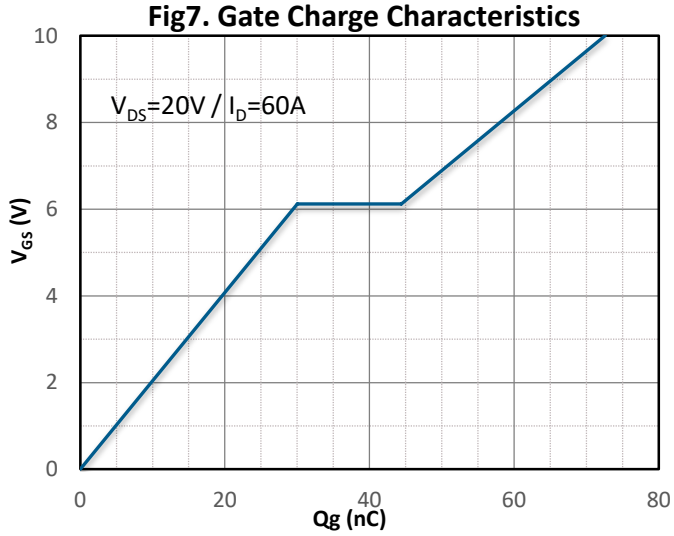


Fig8. Body-diode Forward Characteristics

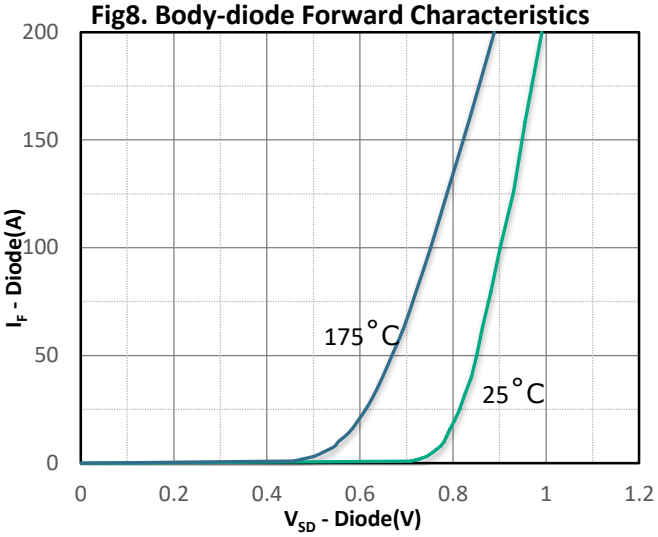


Fig9. Power De-rating

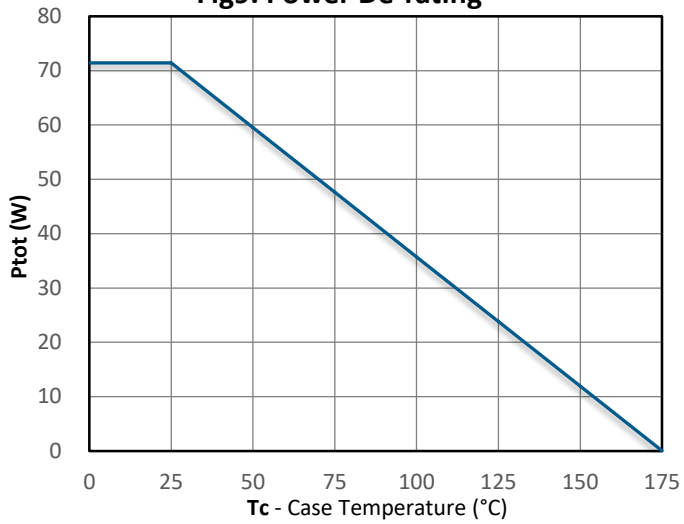


Fig10. Current De-rating

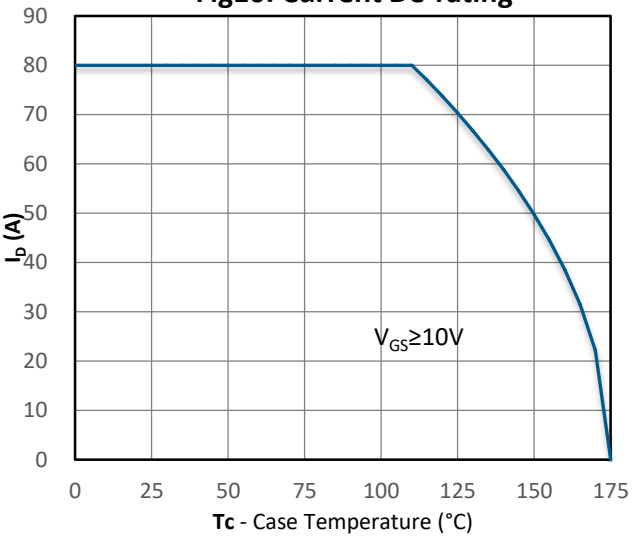


Fig11. Safe Operating Area

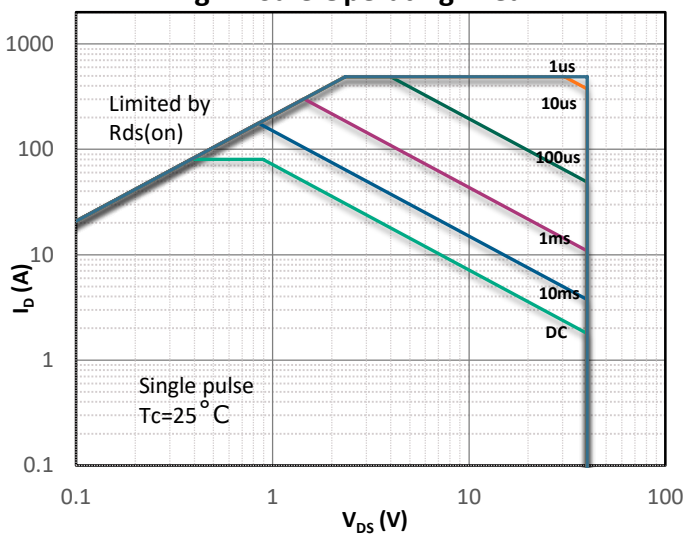
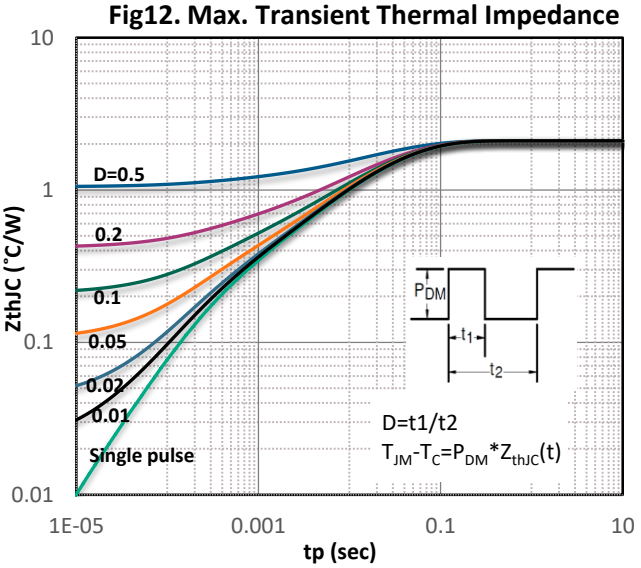
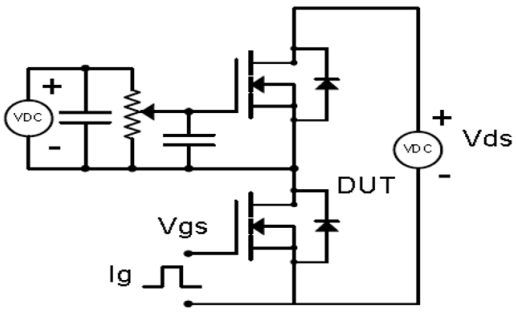


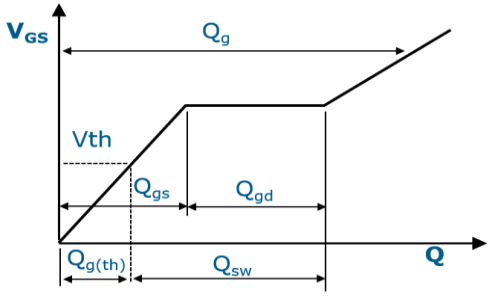
Fig12. Max. Transient Thermal Impedance



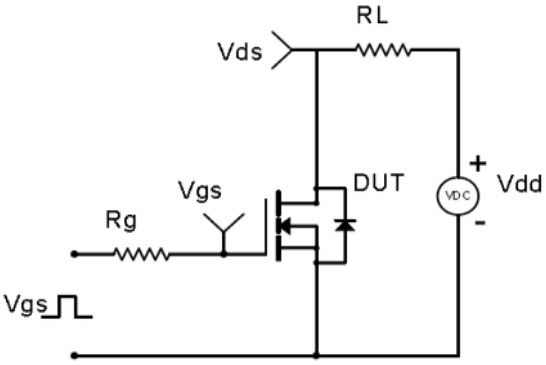
Test Circuit & Waveform

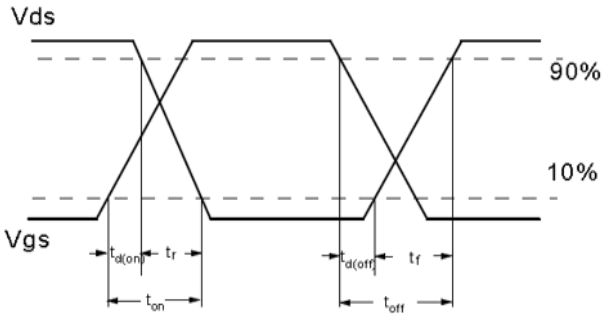
Gate Charge Test Circuit & Waveform



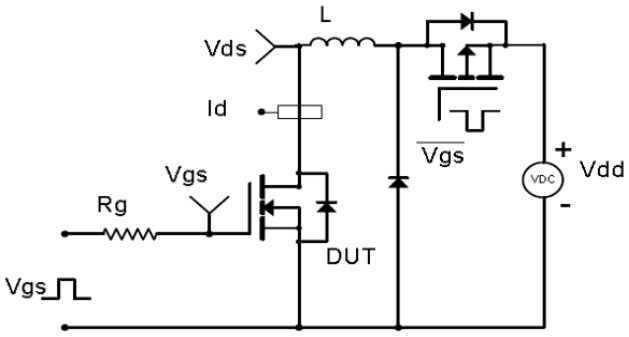


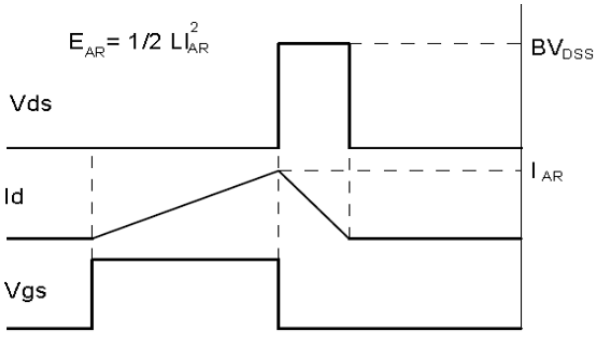
MOSFET Switching Test Circuit & Waveform



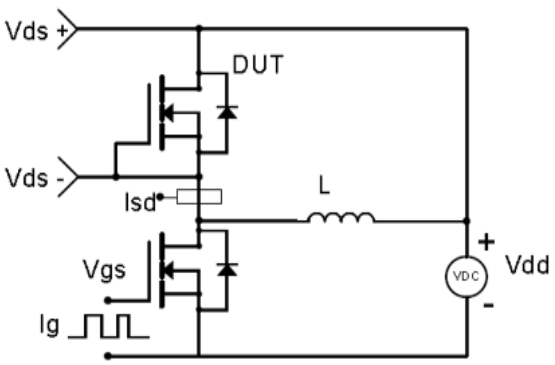


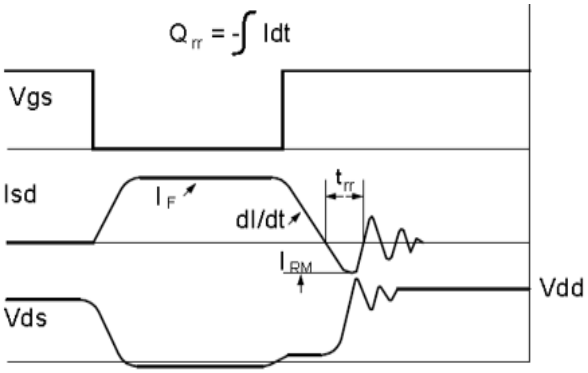
E_{AS} Test Circuit & Waveform





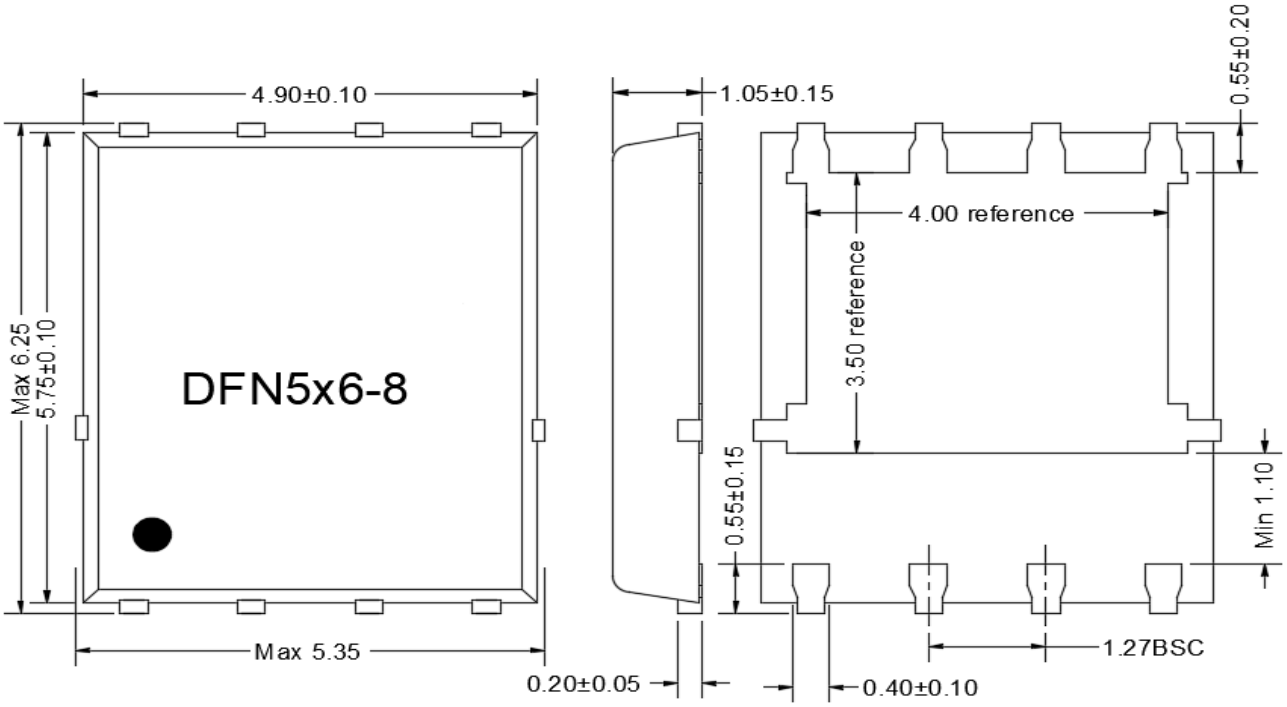
Diode Recovery Test Circuit & Waveform





Package Outline : DFN5*6

*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。