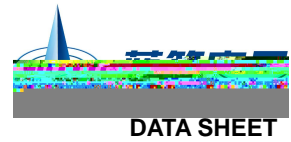


BRCS120N06SYMQ

Rev.A Jul.-2022



/ Descriptions

PDFN5×6A

N

Dual N-CHANNEL MOSFET in a PDFN5x6A Plastic Package.

/ Features

Dual N-Ch

VDS(V)=60V

ID=24.5A

RDS(ON)<13m (VGS=10V)

RDS(ON)<18m (VGS=4.5V)

AEC-Q101

Qualified to AEC-Q101 Standards for High Reliability; HF Product.

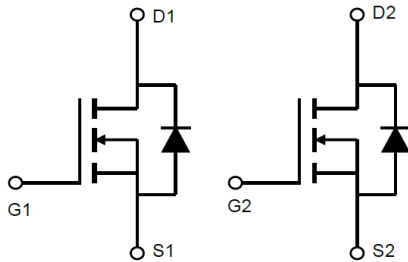
/ Applications

PWM

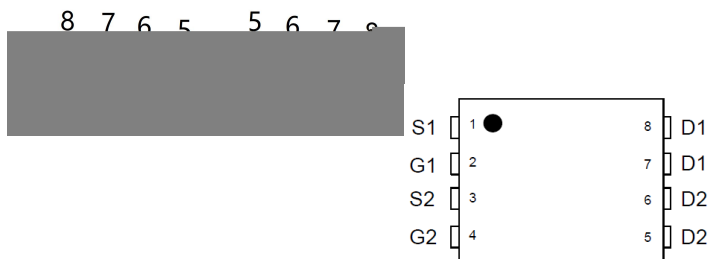
LED

PWM Application, Load Switch, Power Management, Dimming LED, Meet the stringent requirements of automotive applications.

/ Equivalent Circuit

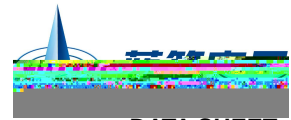


/ Pinning



/ Marking

- See Marking Instructions.



/ Absolute Maximum Ratings(T_a=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DSS}	60	V
Drain Current		I _D (T _C =25°C)	24.5	A
Drain Current - Pulsed		I _{DM}	95	A
Gate-Source Voltage		V _{GSS}	±20	V
Single Pulsed Avalanche Energy		E _{AS}	70	mJ
Avalanche Current		I _{AS}	20	A
Power Dissipation		P _D (T _C =25°C)	12.5	W
Operating and Storage Temperature Range		T _J ,T _{stg}	-55 to 150	°C
Junction-to-Ambient	t ≤ 10	R _{JA}	35	°C/W
Junction-to-Ambient	Steady-State		70	
Junction-to-Case	Steady-State	R _{JC}	10	

/ Electrical Characteristics(T_a=25)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V	I _D =250μA	60	64		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V	V _{GS} =0V			1	μA
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±20V	V _{DS} =0V			±0.1	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS}	I _D =250μA	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	R _{Ds(on)}	V _{GS} =10V	I _D =20A		11.5	13	m
		V _{GS} =4.5V	I _D =10A		15.5	18	m
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V	I _S =1A			1.2	V
Input Capacitance	C _{iss}	V _{DS} =25V f=1.0MHz	V _{GS} =0V		1010		pF
Output Capacitance	C _{oss}				250		
Reverse Transfer Capacitance	C _{rss}				280		
Gate resistance	R _g	V _{GS} =0V f=1MHz	V _{DS} =0V		2.3		
Total Gate Charge	Q _{g(10V)}	V _{GS} =10V I _D =13A	V _{DS} =30V		13.5		nC
Total Gate Charge	Q _{g(4.5V)}				6.5		
Gate Source Charge	Q _{gs}				2.5		
Gate Drain Charge	Q _{gd}				3.0		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=30V$ $R_L=2.3$ $R_{GEN}=3$		5		ns
Turn-On Rise Time	t_r			3		
Turn-Off Delay Time	$t_{d(off)}$			19		
Turn-Off Fall Time	t_f			3		

/ Electrical Characteristic Curve

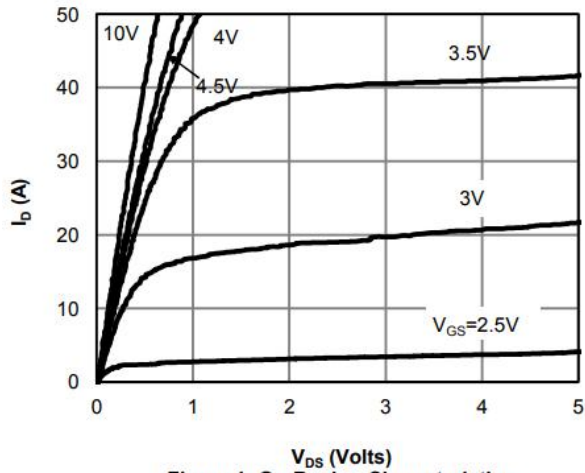


Figure 1: On-Region Characteristics

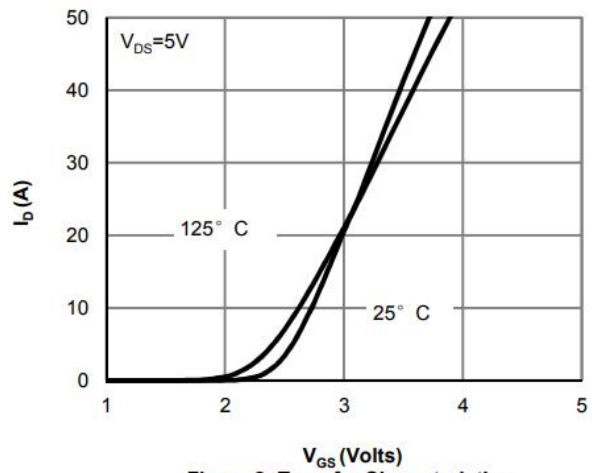
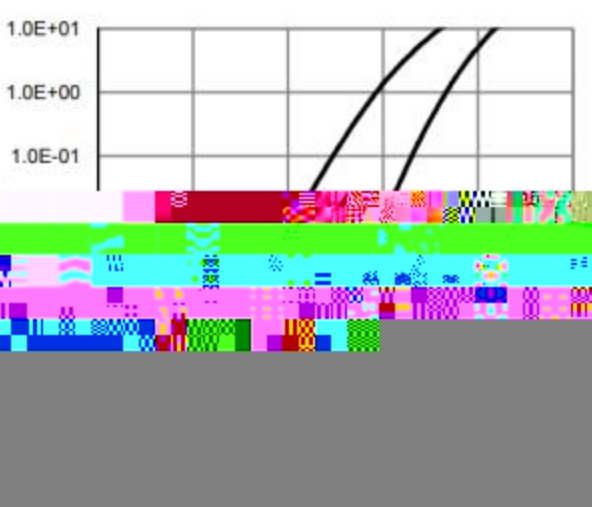
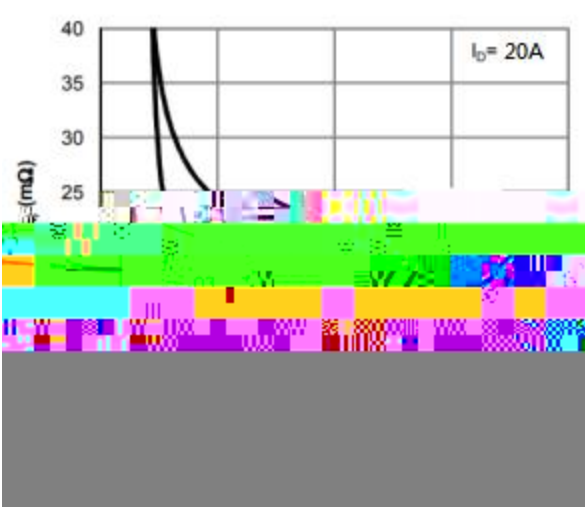
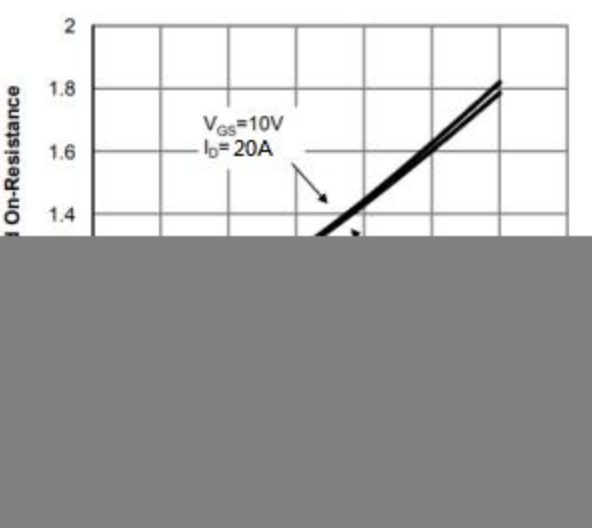
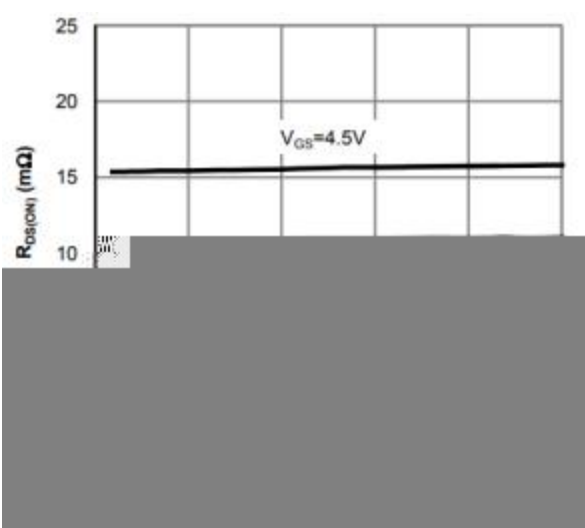
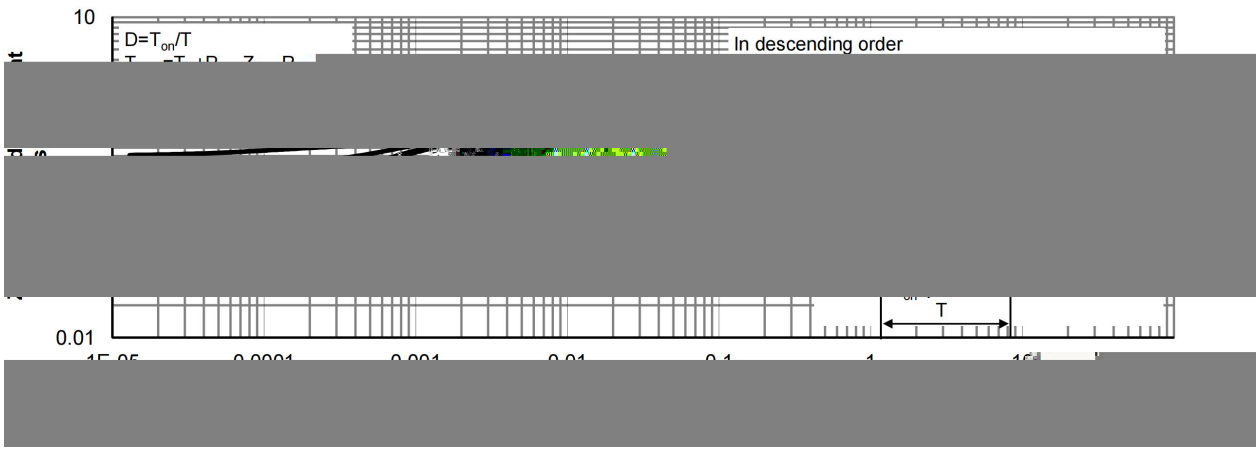
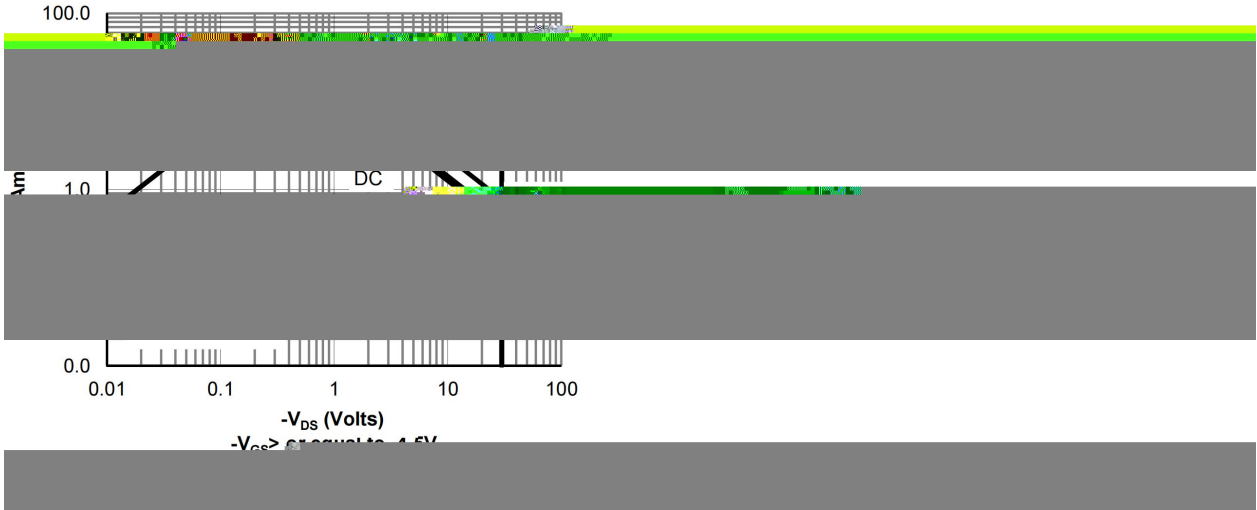
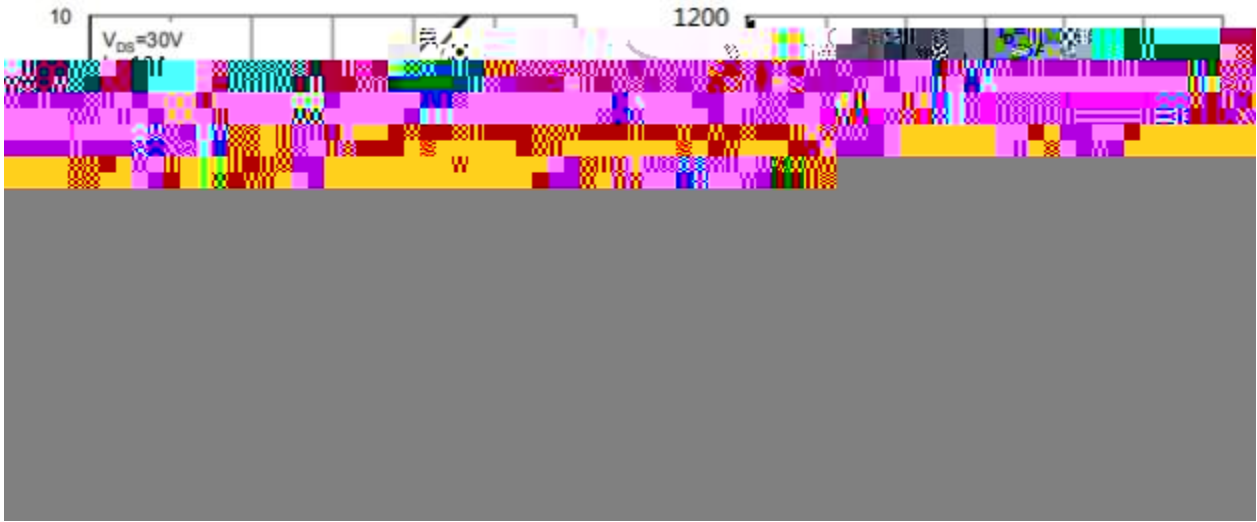
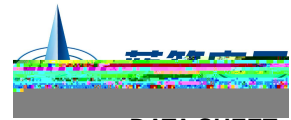


Figure 2: Transfer Characteristics

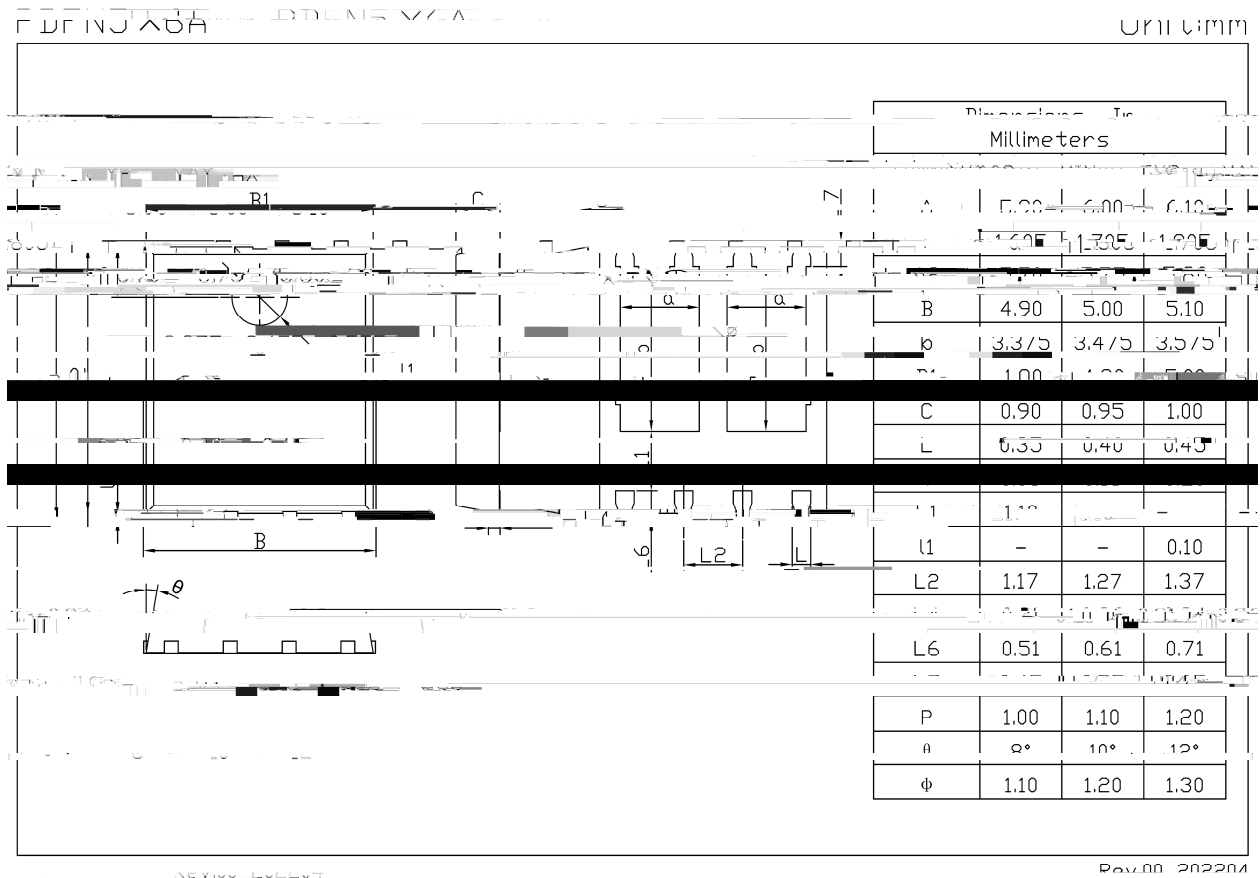


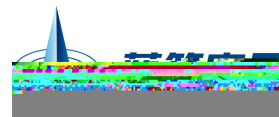
/ Electrical Characteristic Curve



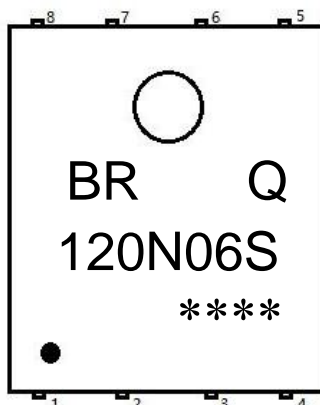


/ Package Dimensions





/ Marking Instructions



BR

Q

120N06S

Note

BR

Company Code

Q:

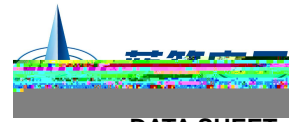
Automobile halogen-free product Code

120N06S

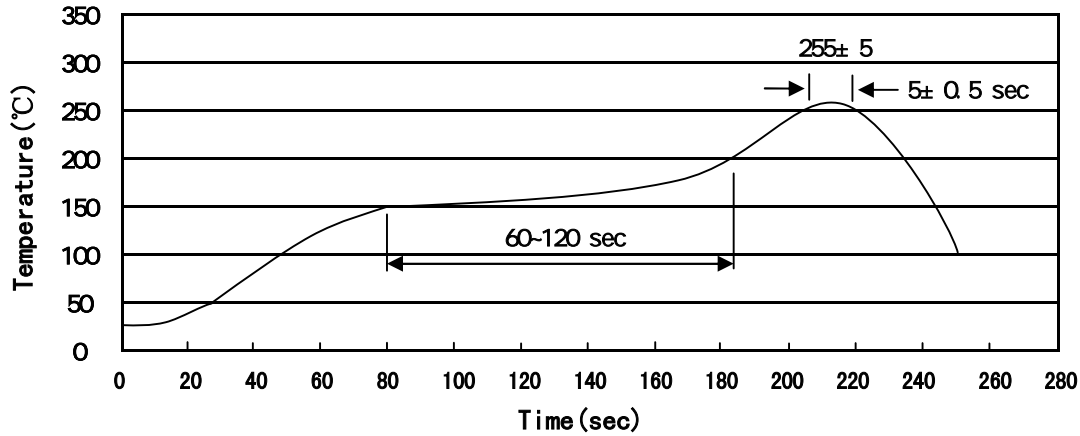
Product Type

****:

Lot No. Code, code change with Lot No



() / Temperature Profile for IR Reflow Soldering(Pb-Free)



Note:

- 1 150 200 60 120sec; 1.Preheating:150~200°C, Time:60~120sec.
- 2 255±5 5±0.5sec; 2.Peak Temp.:255±5°C, Duration:5±0.5sec.
- 3 2 10°C/sec. 3. Cooling Speed: 2~10°C/sec.

/ Resistance to Soldering Heat Test Conditions

260±5°C 10±1 sec. Temp.:260±5°C Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
PDFN5 × 6A	5000	2	10000	6	60000	13" × 12	360 × 360 × 50	380 × 335 × 366

/ Notices