

/ Revised record

A	2022.5.24	All	AOS-AOND32324		
A	2022-7-27	all	Q AEC-Q101 , Q 245± 5°C 5±0.5sec 255±5°C 5±0.5sec		

/ Descriptions

PDFN5×6A N

Dual N-CHANNEL MOSFET in a PDFN5×6A Plastic Package.

/ Features

Dual N-Ch

$V_{DS}(V)=60V$

$I_D=24.5A$

$R_{DS(ON)}<13m\Omega(V_{GS}=10V)$

$R_{DS(ON)}<18m\Omega(V_{GS}=4.5V)$

AEC-Q101

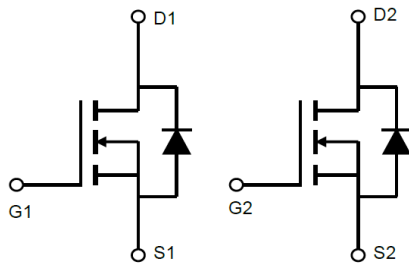
Qualified to AEC-Q101 Standards for High Reliability; HF Product.

/ Applications

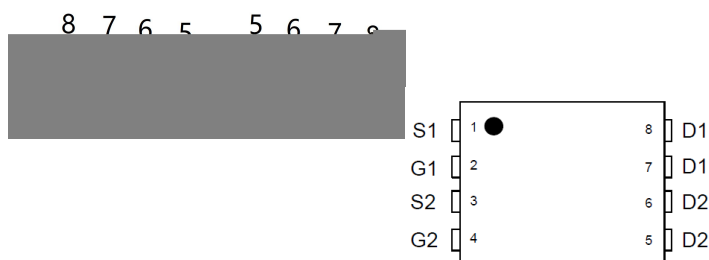
PWM LED

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($T_a=25^\circ\text{C}$)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	60	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	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		$P_D(T_c=25^\circ\text{C})$	12.5	W
Operating and Storage Temperature Range		T_J, T_{stg}	-55 to 150	$^\circ\text{C}$
Junction-to-Ambient	$t \leq 10$	$R_{\theta JA}$	35	$^\circ\text{C/W}$
Junction-to-Ambient	Steady-State		70	
Junction-to-Case	Steady-State	$R_{\theta JC}$	10	

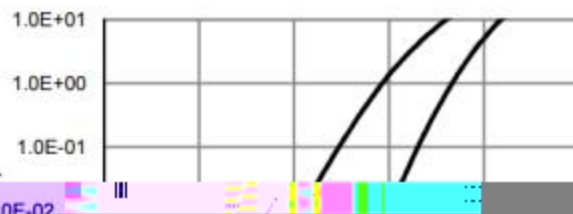
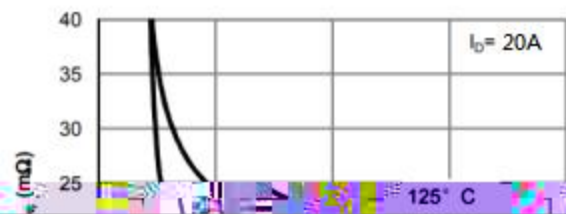
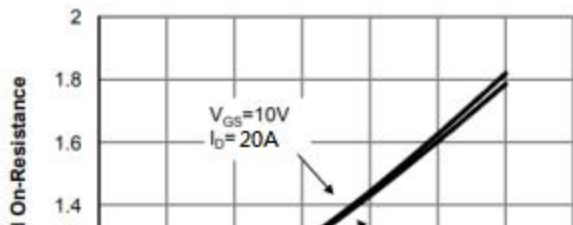
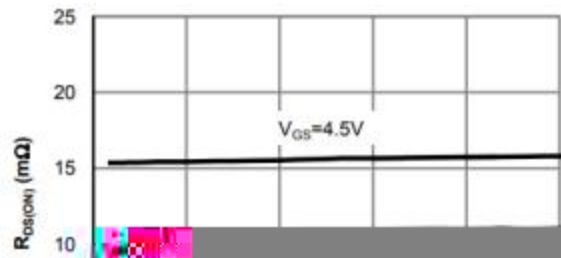
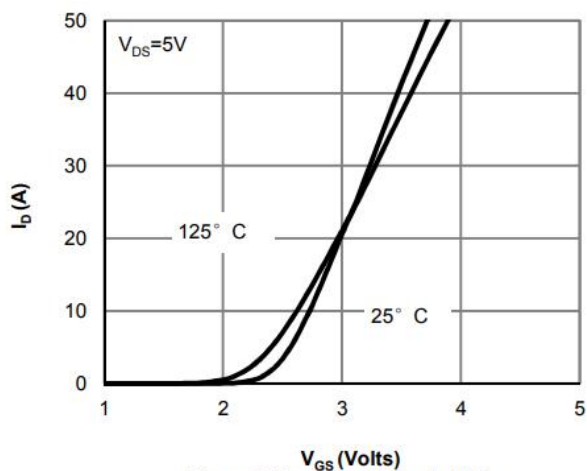
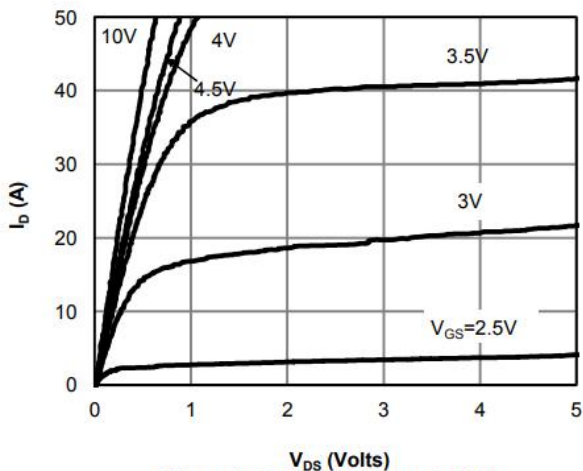
/ Electrical Characteristics($T_a=25^\circ\text{C}$)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$	$I_D=250\mu A$	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}	$V_{GS}=\pm 20V$	$V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu A$	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 Ω
		$V_{GS}=4.5V$	$I_D=10A$		15.5	18	m Ω
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		Ω
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		

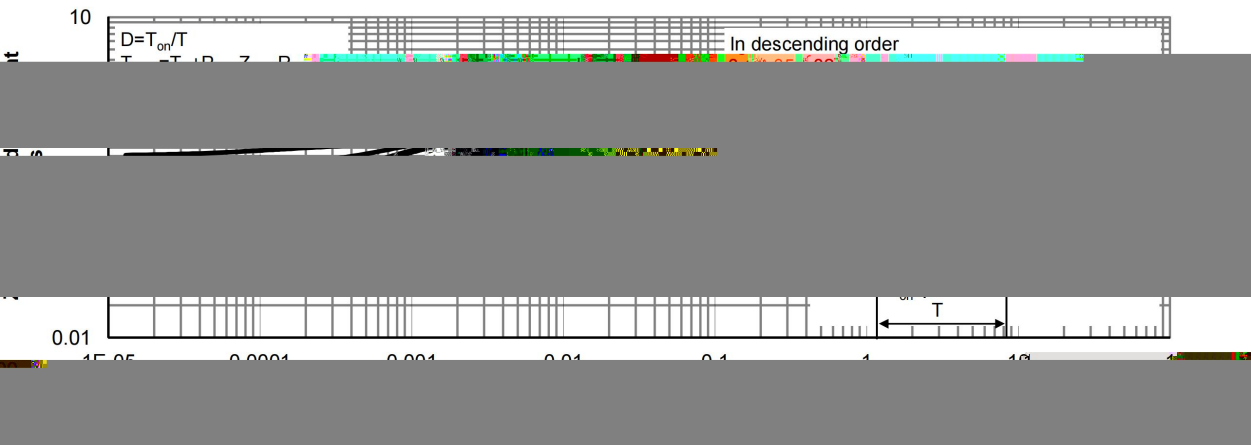
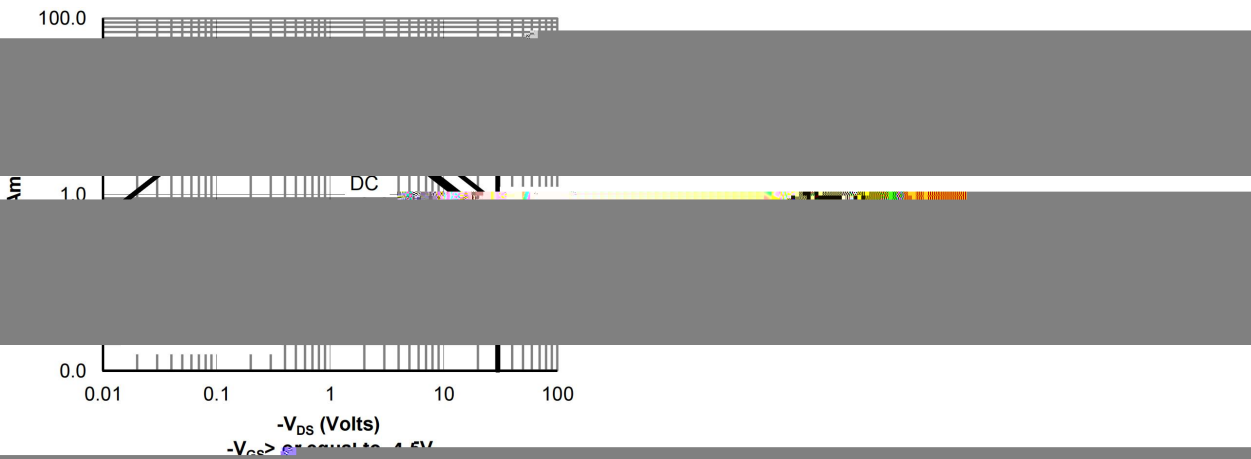
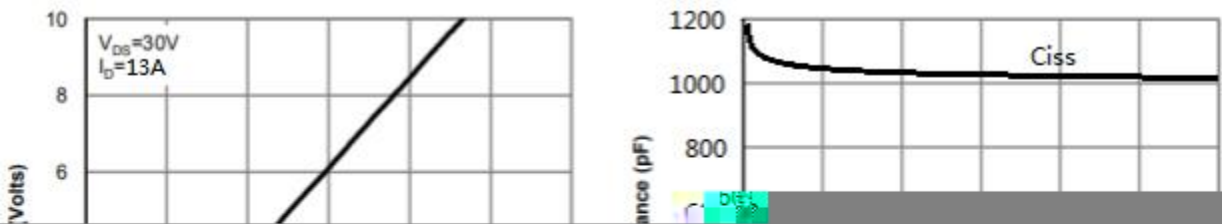
/ Electrical Characteristics(Ta=25)

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

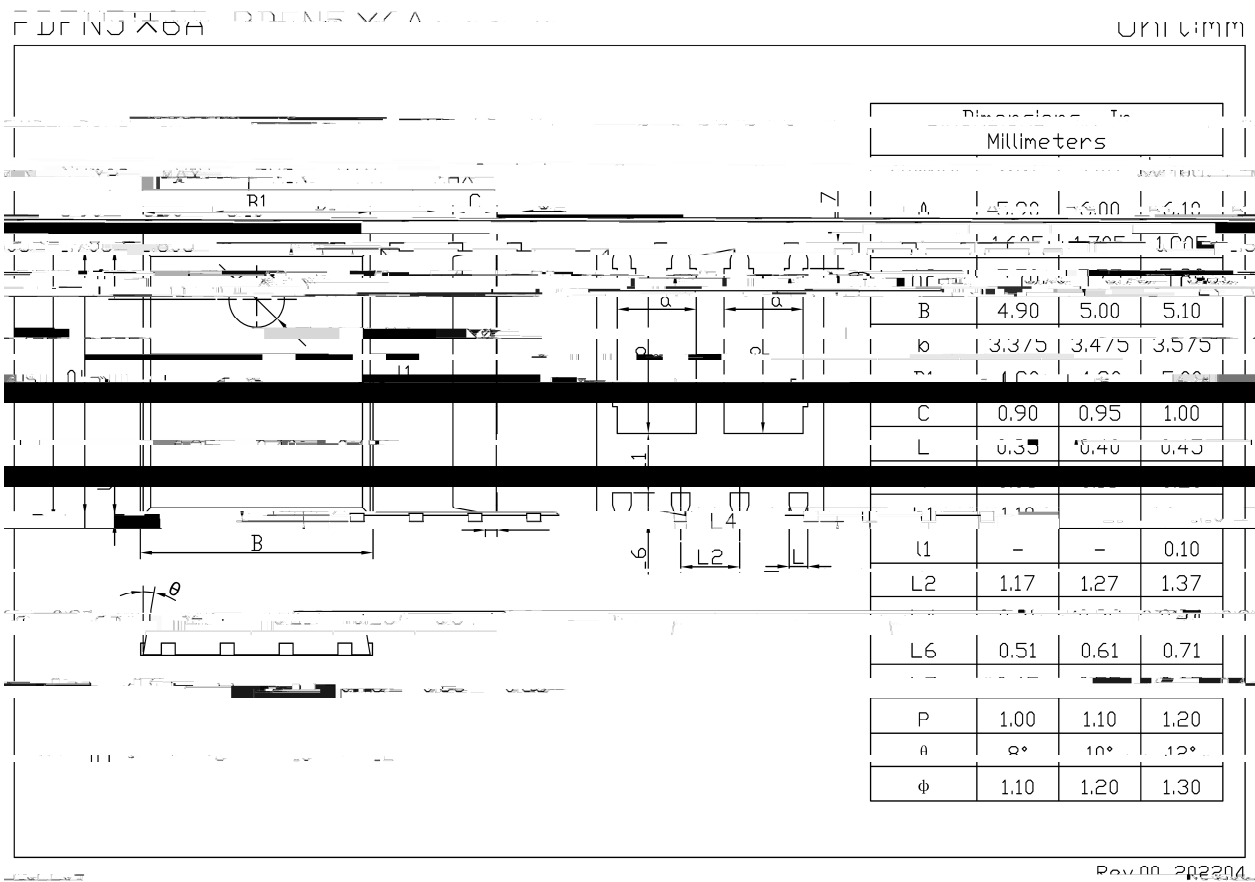
/ Electrical Characteristic Curve



Electrical Characteristic Curve

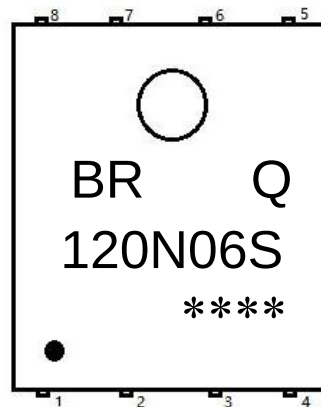


/ Package Dimensions



Rev.00 202204

/ Marking Instructions



BR

Q

120N06S

Note

BR

Company Code

Q:

Automobile halogen-free product Code

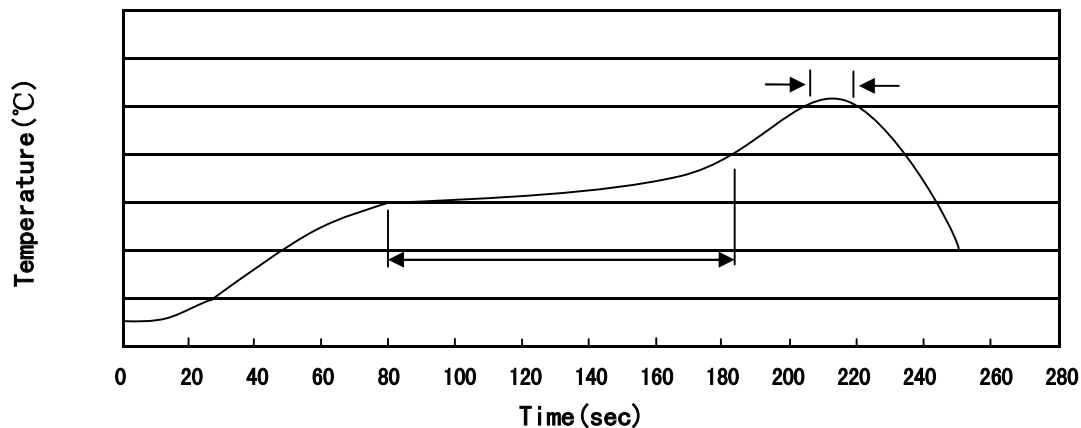
120N06S

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