## / Descriptions

PDFN5×6 N

N-Channel MOSFET in a PDFN5×6 Plastic Package.

## / Features

$V_{DS}$(V)=60 V $I_D$=158A

$R_{DS(ON)}$@10V≤2.0mΩ(Typ.1.8mR)

$R_{DS(ON)}$@4.5V≤3.0mΩ(Typ.2.5mR)

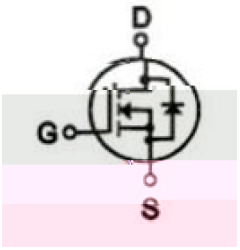
AEC-Q101 Qualified to AEC-Q101 Standards for High Reliability, HF Product.

## / Applications

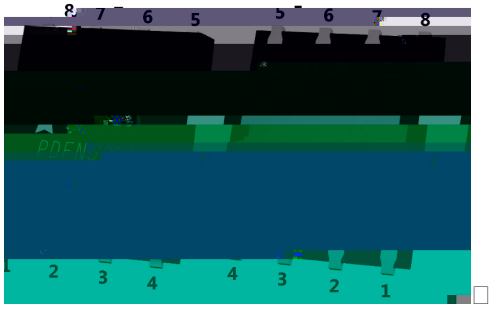
DC-DC

Secondary Side Synchronous Rectification,DC-DC Converter,Motor Control,Load Switching, Meet the stringent requirements of automotive applications.

## / Equivalent Circuit




## / Pinning




PIN1 2 3 S PIN4 G PIN5 6 7 8 D

## / Marking

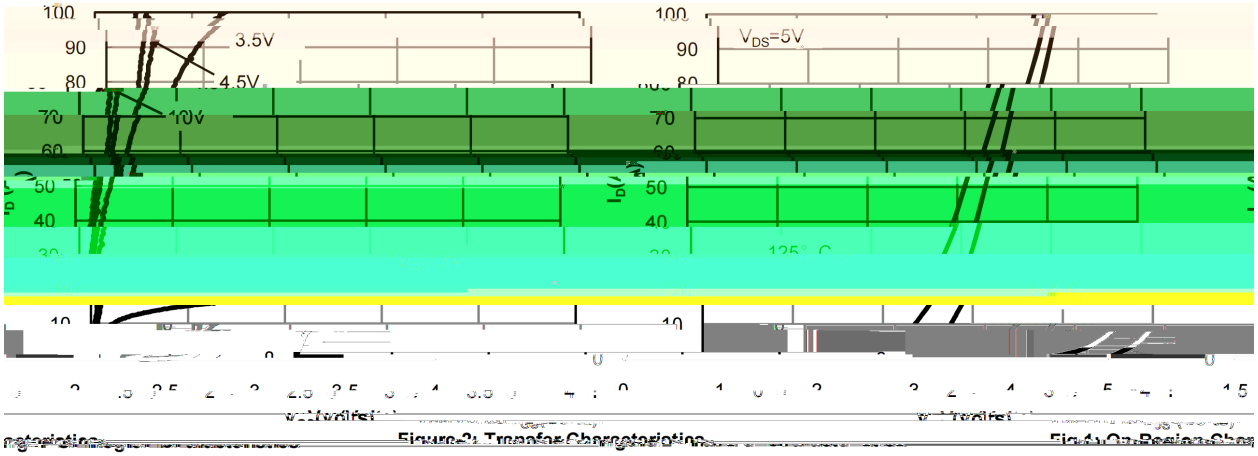
See Marking Instructions.

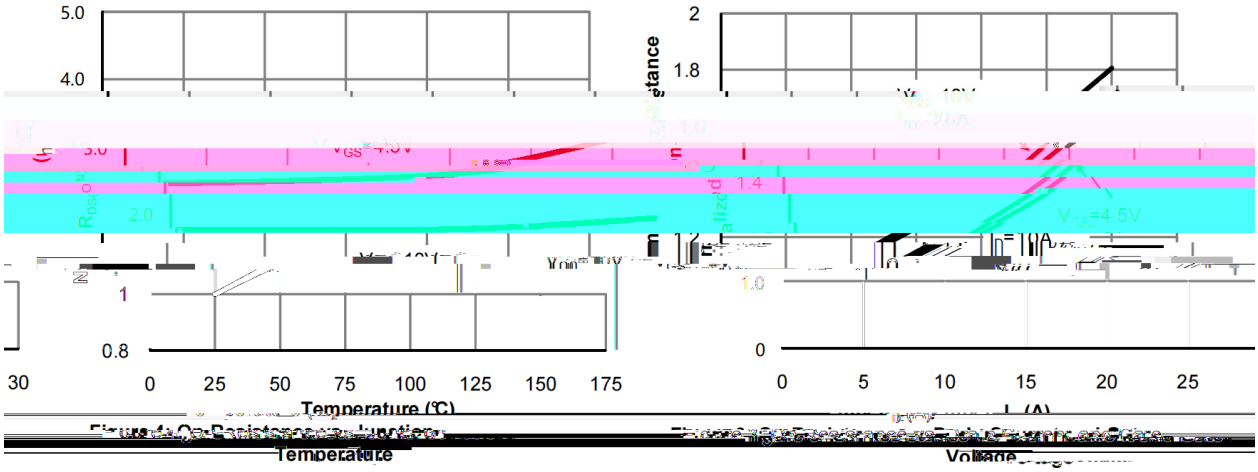
| Parameter | Symbol | Rating | Unit |
|---|---|---|---|
| Drain-Source Voltage | $V_{DS}$ | 60 | V |
| Continuous Drain Current | $I_D$(Tc=25 ) | 158 | A |
| Pulsed Drain Current | $I_{DM}$ | 316 | A |
| Gate-Source Voltage | $V_{GS}$ | ± 20 | V |
| Power Dissipation | $P_D$($T_c$=25 ) | 90 | W |
| Avalanche energy(L=0.5mH) | $E_{AS}$ | 380 | mJ |
| Avalanche Current(L=0.5mH) | $I_{AS}$ | 30.8 | A |
| Junction and Storage Temperature Range | $T_j$, $T_{stg}$ | -55 to 150 | |
| Maximum Junction-to-Ambient t ≤ 10s | $R_{\theta JA}$ | 20 | / W |

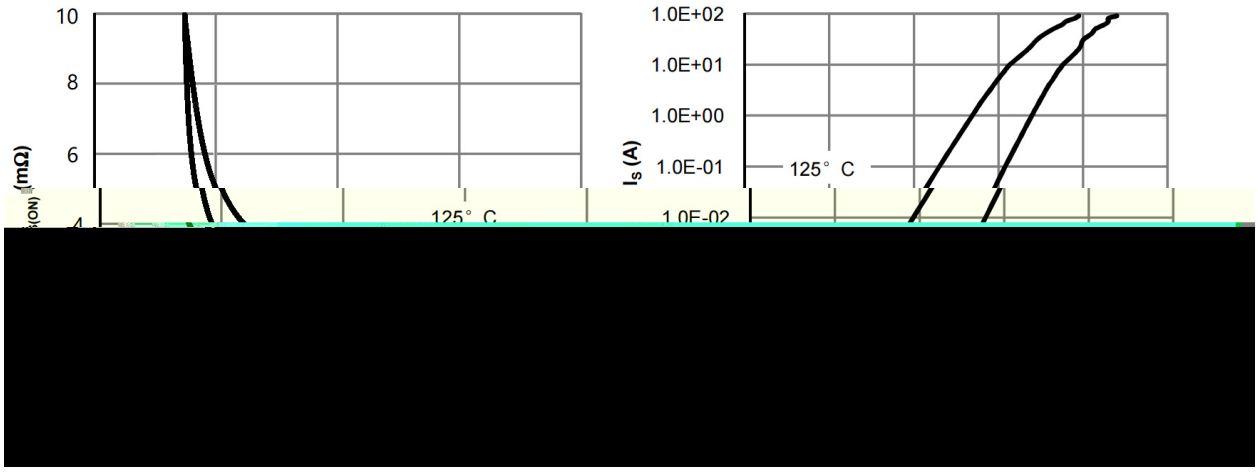
## / Electrical Characteristics(Ta=25

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Turn-On Delay Time | $t_{d(on)}$ | $V_{GS}$=10V $V_{DS}$=20V<br>$R_L$=1Ω $R_{GEN}$=3Ω | | 13 | | ns |
| Turn-On Rise Time | $t_r$ | | | 4 | | |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 47 | | |
| Turn-Off Fall Time | $t_f$ | | | 6.5 | | |

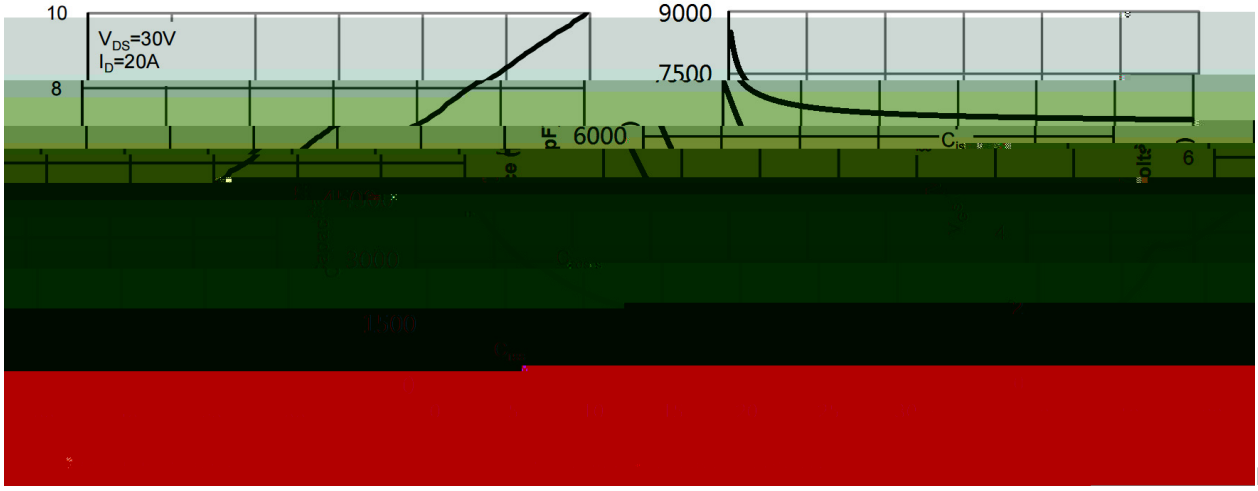
## / Electrical Characteristic Curve

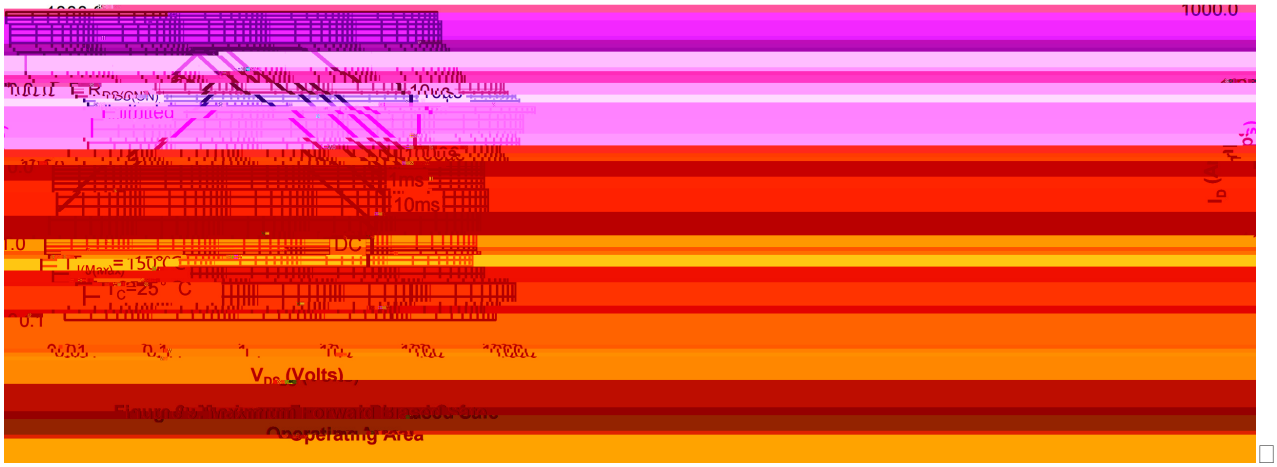


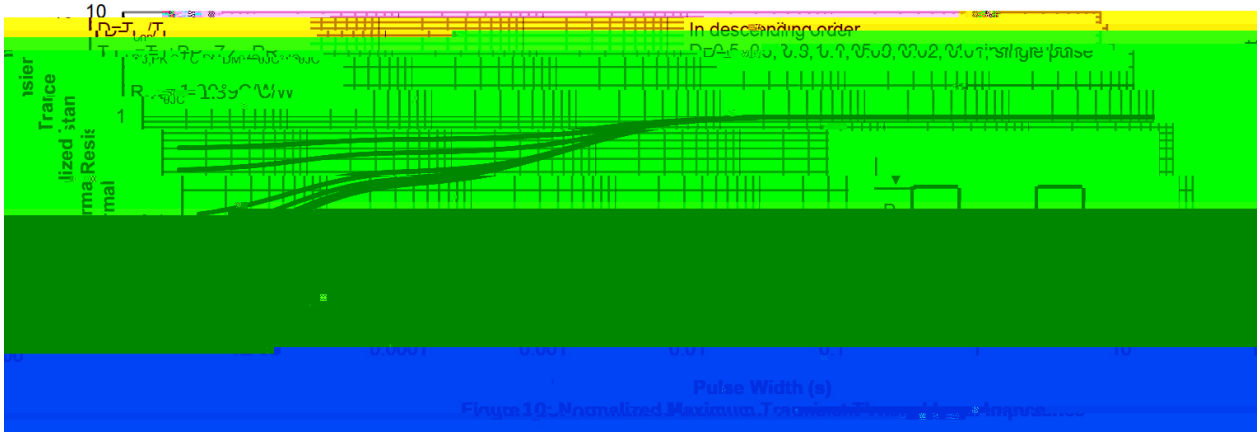



## / Electrical Characteristic Curve



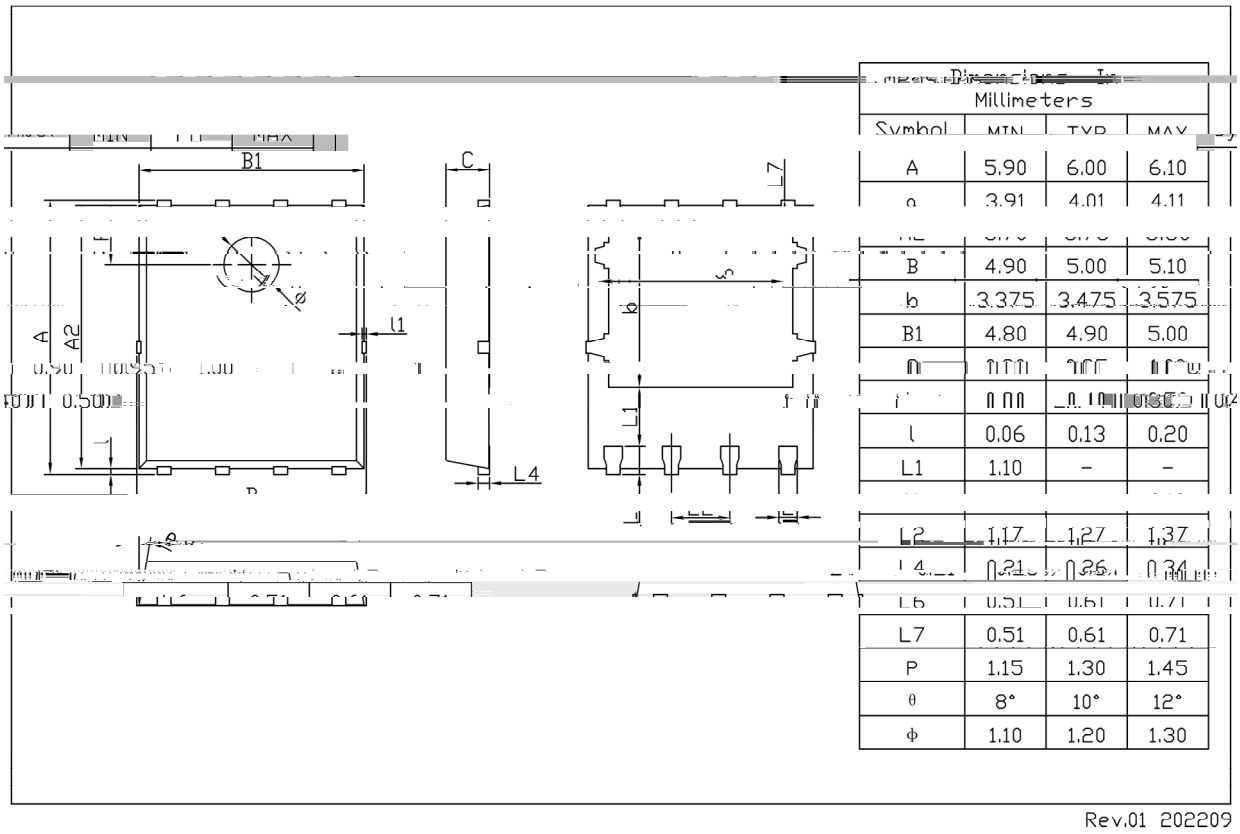



## / Package Dimensions

PDFN5×6

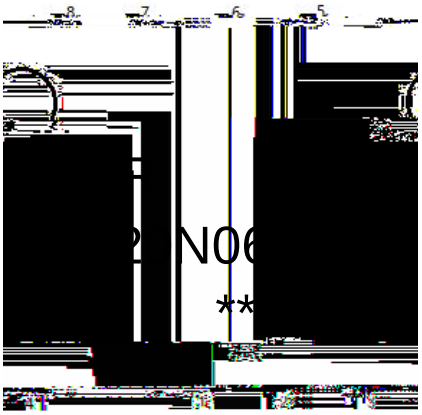
Unit:mm




| Symbol | Millimeters MIN | TYP | MAX |
|---|---|---|---|
| A | 5.90 | 6.00 | 6.10 |
| B | 4.90 | 5.00 | 5.10 |
| b | 3.375 | 3.475 | 3.575 |
| B1 | 4.80 | 4.90 | 5.00 |
| l | 0.06 | 0.13 | 0.20 |
| L1 | 1.10 | – | – |
| L7 | 0.51 | 0.61 | 0.71 |
| P | 1.15 | 1.30 | 1.45 |
| θ | 8° | 10° | 12° |
| Φ | 1.10 | 1.20 | 1.30 |

Rev.01 202209

## / Marking Instructions




BR

Q

020N06S

****

Note

| | |
|---|---|
| BR | Company Code |
| Q: | Automobile halogen-free product Code |
| 020N06S | Product Type Code |
| ****: | Lot No. Code, code change with Lot No |

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

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Note:

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