

BRCS090N02EYW

Rev.A Mar.-2024

/ Descriptions

DFN 3×2-6L N

Common-Drain Dual N-Channel Enhancement MOSFET in a DFN3×2-6L Plastic Package.

/ Features

$V_{DS(V)}=20V$ $I_D=10A$

$R_{DS(ON)}@4.5V$ 9.0m (Typ.7.8mR)

$R_{DS(ON)}@3.8V$ 9.7m (Typ.8.2mR)

$R_{DS(ON)}@2.5V$ 12.5m (Typ.9.5mR)

2KV

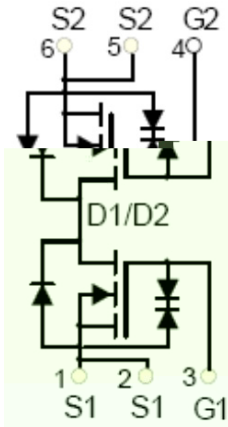
ESD protected up to 2KV, HF Product.

/ Applications

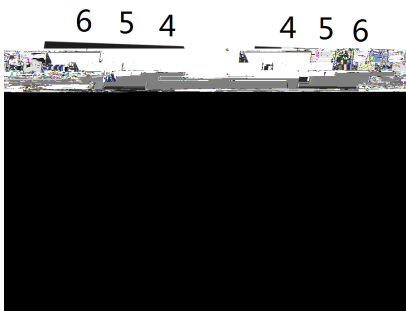
POL

Handheld Instruments, POL Applications, Battery Protection Applications.

/ Equivalent Circuit



/ Pinning



/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

| Parameter | | Symbol | Rating | Unit |
|---|--------------|----------------|------------|------|
| Drain-Source Voltage | | V_{DSS} | 20 | V |
| Drain Current | | I_D | 10 | A |
| Drain Current - Pulsed | | I_{DM} | 52 | A |
| Gate-Source Voltage | | V_{GSS} | ± 10 | V |
| Power Dissipation | | P_D | 1.5 | W |
| Operating and Storage Temperature Range | | T_J, T_{stg} | -55 to 150 | |
| Junction-to-Ambient | Steady-State | R_{JA} | 83.3 | /W |

/ Electrical Characteristics(Ta=25)

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|-----------------------------------|--------------|--|-----|------|----------|---------|
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0V$ $I_D=250\mu A$ | 20 | 21 | | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=20V$ $V_{GS}=0V$ | | | 1.0 | μA |
| Gate-Body leakage current | I_{GSS} | $V_{GS}=\pm 10V$ $V_{DS}=0V$ | | | ± 10 | μA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}$ $I_D=250\mu A$ | 0.5 | 0.7 | 1.0 | V |
| Static Drain-Source On-Resistance | $R_{DS(on)}$ | $V_{GS}=4.5V$ $I_D=3A$ | | 7.8 | 9.0 | m |
| | | $V_{GS}=4.0V$ $I_D=3A$ | | 8.0 | 9.3 | m |
| | | $V_{GS}=3.8V$ $I_D=3A$ | | 8.2 | 9.7 | m |
| | | $V_{GS}=3.1V$ $I_D=3A$ | | 8.5 | 10.5 | m |
| | | $V_{GS}=2.5V$ $I_D=3A$ | | 9.5 | 12.5 | m |
| Diode Forward Voltage | V_{SD} | $V_{GS}=0V$ $I_S=1.0A$ | | | 1.2 | V |
| Input Capacitance | C_{iss} | $V_{DS}=10V$ $V_{GS}=0V$ $f=1.0MHz$ | | 1900 | | pF |
| Output Capacitance | C_{oss} | | | 255 | | pF |
| Reverse Transfer Capacitance | C_{rss} | | | 200 | | pF |
| Total Gate Charge | Q_g | $V_{GS}=4.5V$ $V_{DS}=15V$ $I_D=10A$ | | 17.9 | | nC |
| Gate-Source Charge | Q_{gs} | | | 1.5 | | nC |
| Gate-Drain Charge | Q_{gd} | | | 4.7 | | nC |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DS}=10V$ $V_{GS}=5.0V$ $R_L=1.35$ $R_{GEN}=3$ | | 2.2 | | ns |
| Turn-On Rise Time | t_r | | | 5.9 | | ns |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 40 | | ns |
| Turn-Off Fall Time | t_f | | | 90 | | ns |

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ATA SHEET w.fsbrec.com

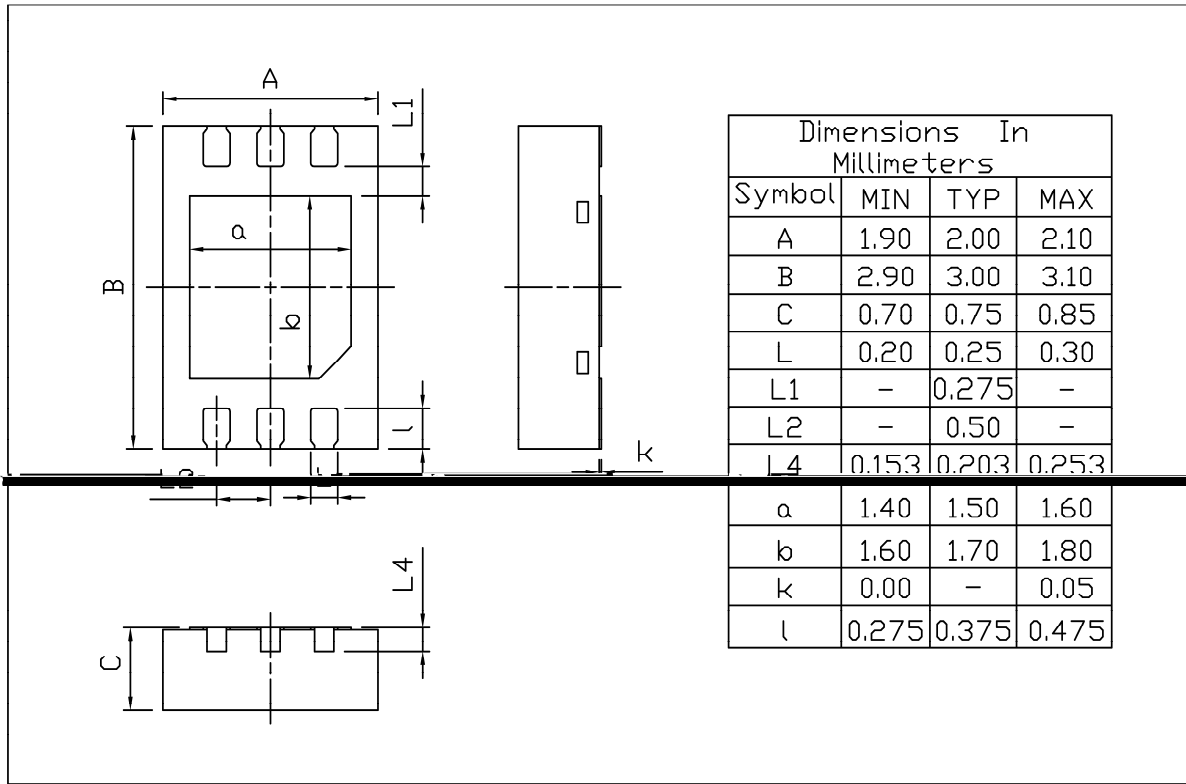
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/ Package Dimensions

DFN3X2-6L

Unit:mm



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/ Marking Instructions

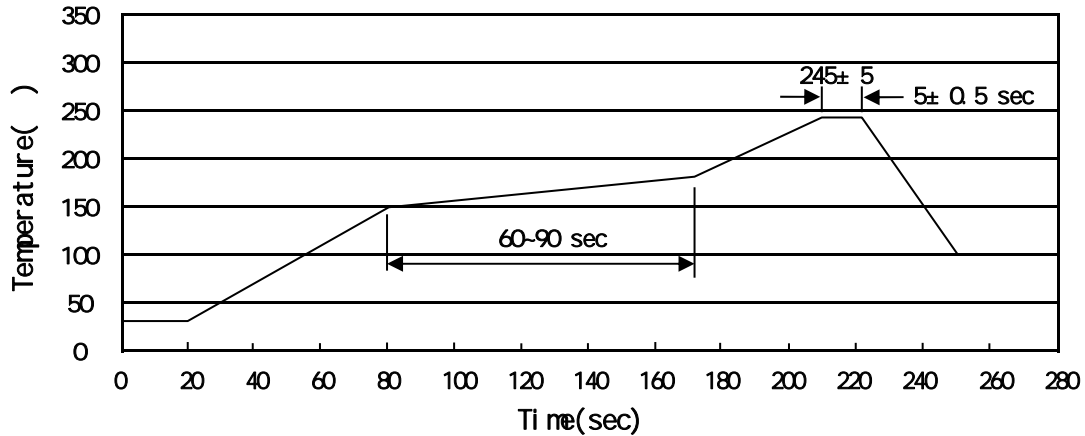


BR
090N02E

Note:

BR: Company Code
090N02E: Product Type Code
****: Lot No. Code, code change with Lot No

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



Note:

- | | | | | | |
|---|-------|-----|----|-----------|---|
| 1 | 150 | 180 | 60 | 90sec; | 1.Preheating:150~180 , Time:60~90sec. |
| 2 | 245±5 | | | 5±0.5sec; | 2.Peak Temp.:245±5 , Duration:5±0.5sec. |
| 3 | | | 2 | 10 /sec. | 3. Cooling Speed: 2~10 /sec. |

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ REEL

| Package Type | Units | | | | | Dimension (unit mm ³) | | |
|--------------|------------|-----------------|-----------------|-----------------------|-----------------|-----------------------------------|-------------|-------------|
| | Units/Reel | Reels/Inner Box | Units/Inner Box | Inner Boxes/Outer Box | Units/Outer Box | Reel | Inner Box | Outer Box |
| DFN3x2-6L | 3,000 | 10 | 30,000 | 4 | 120,000 | 7 x8 | 210x205x205 | 445x435x230 |

/ Notices