

## Trench MOS Barrier Schottky Rectifier

Reverse Voltage - 120 V

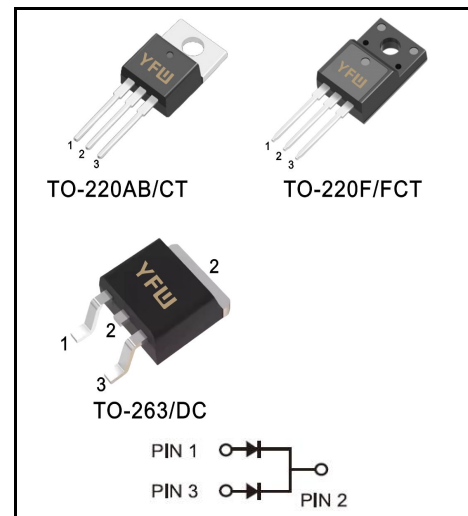
Forward Current - 20 A

### FEATURES

- ♦Very low forward voltage
- ♦High current capability
- ♦High forward surge capability
- ♦Low power losses , High efficiency
- ♦Guarding for over voltage protection
- ♦Lead free in comply with EU RoHS 2011/65/EU directives

### MECHANICAL DATA

- ♦Case: TO-220AB/CT TO-220F/FCT TO-263/DC
- ♦Solder bath temperature 275°C maximum, 10s per JESD22-106



### Primary Characteristic

|           |       |
|-----------|-------|
| $I_o$     | 2*10A |
| $V_{RRM}$ | 120V  |
| $I_{FSM}$ | 160A  |
| $V_F$     | 0.66V |
| $T_J$ Max | 150°C |

### Maximum Ratings (Per Leg) at Ta=25°C unless otherwise specified

| Parameter                                                   | Symbols                       | Value      | Units |
|-------------------------------------------------------------|-------------------------------|------------|-------|
| Maximum Repetitive Peak Reverse Voltage                     | $V_{RRM}$                     | 120        | V     |
| Maximum RMS voltage                                         | $V_{RMS}$                     | 84         | V     |
| Maximum DC Blocking Voltage                                 | $V_{DC}$                      | 120        | V     |
| Maximum Average Forward Rectified Current                   | Per Leg                       | 10         | A     |
|                                                             | Total                         | 20         |       |
| Peak Forward Surge Current, 8.3ms Single Half Sine-wave     | $I_{FSM}$                     | 160        | A     |
| Operating Temperature Range                                 | $T_J$                         | -50 ~ +150 | °C    |
| Storage Temperature Range                                   | $T_{STG}$                     | -50 ~ +150 | °C    |
| Typical Thermal Resistance (Note1) TO-220AB, TO-263 TO-220F | $R_{\theta JA}/R_{\theta JC}$ | 2/4        | °C/W  |

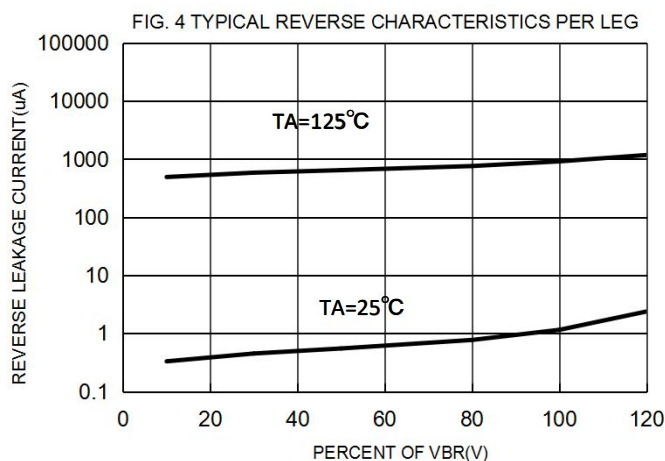
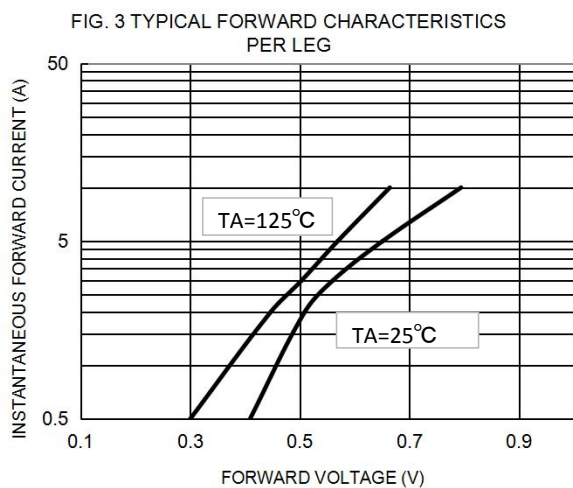
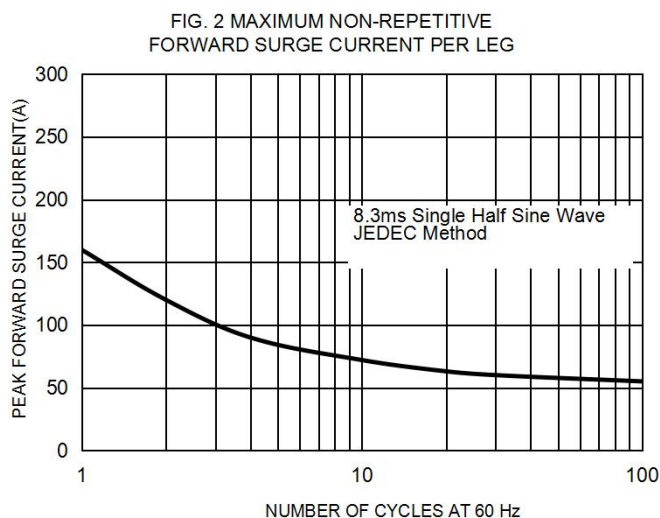
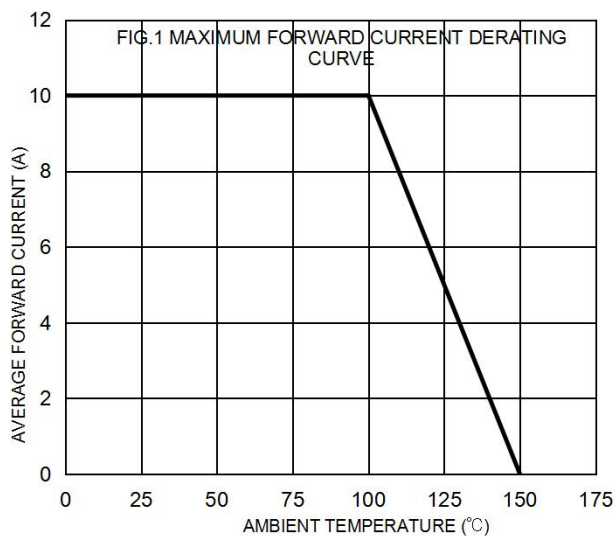
Note1: Thermal resistance from Junction to case per leg mounted on heatsink.

### Electrical Characteristics (Per Leg) unless otherwise specified

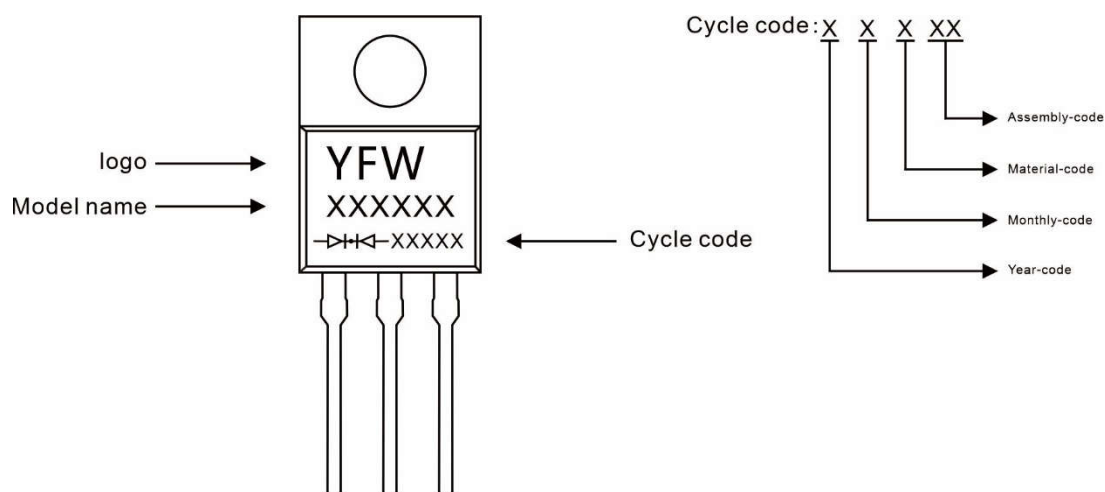
| Characteristics                                 |          | Symbols        | Value |      | Units |
|-------------------------------------------------|----------|----------------|-------|------|-------|
| Forward Voltage Drop(Note2)                     |          | V <sub>F</sub> | Typ   | Max  | V     |
| at I <sub>F</sub> =3A                           | TA=25°C  |                | 0.56  | -    |       |
|                                                 | TA=125°C |                | 0.51  | -    |       |
| at I <sub>F</sub> =5A                           | TA=25°C  |                | 0.65  | 0.69 |       |
|                                                 | TA=125°C |                | 0.57  | -    |       |
| at I <sub>F</sub> =10A                          | TA=25°C  |                | 0.79  | 0.86 |       |
|                                                 | TA=125°C |                | 0.66  | -    |       |
| Maximum Reverse Current at V <sub>R</sub> =120V | TA=25°C  | I <sub>R</sub> | 3     | 30   | uA    |
|                                                 | TA=125°C |                | 1.2   | -    | mA    |

Note2: Pulse test: 300 μs pulse width, 1 % duty cycle

**RATINGS AND CHARACTERISTIC CURVES**



## Marking Diagram



## Ordering information

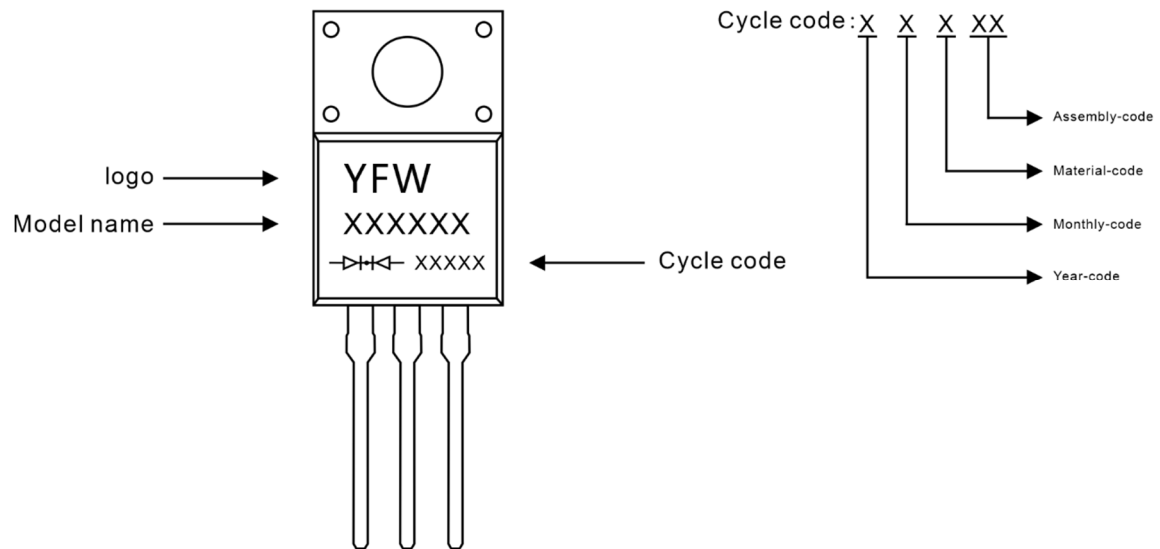
| Model name  | Package  | Unit Weight   | Base Quantity | Packing Quantity           |
|-------------|----------|---------------|---------------|----------------------------|
| SRT20V120CT | TO-220AB | 0.07oz(1.96g) | 50pcs/tube    | 1000PCS/Box 5000PCS/Carton |

## Package Dimensions

### TO-220AB

| Symbol | Millimeter |       | Inches |       |
|--------|------------|-------|--------|-------|
|        | Min.       | Max.  | Min.   | Max.  |
| A      | 4.30       | 4.70  | 0.169  | 0.185 |
| A1     | 0.00       | 0.15  | 0.000  | 0.006 |
| b      | 0.71       | 0.91  | 0.028  | 0.036 |
| b1     | 1.17       | 1.37  | 0.046  | 0.054 |
| c      | 0.30       | 0.50  | 0.012  | 0.020 |
| c1     | 1.17       | 1.37  | 0.046  | 0.054 |
| D      | 9.90       | 10.20 | 0.390  | 0.402 |
| E      | 8.50       | 8.90  | 0.335  | 0.350 |
| E1     | 12.00      | 12.50 | 0.472  | 0.492 |
| e      | 2.44       | 2.64  | 0.096  | 0.104 |
| e1     | 4.88       | 5.28  | 0.192  | 0.208 |
| F      | 2.60       | 2.80  | 0.102  | 0.110 |
| L      | 13.20      | 13.80 | 0.520  | 0.543 |
| L1     | 3.80       | 4.20  | 0.150  | 0.165 |
| Φ      | 3.60       | 3.96  | 0.142  | 0.156 |

## Marking Diagram



## Ordering information

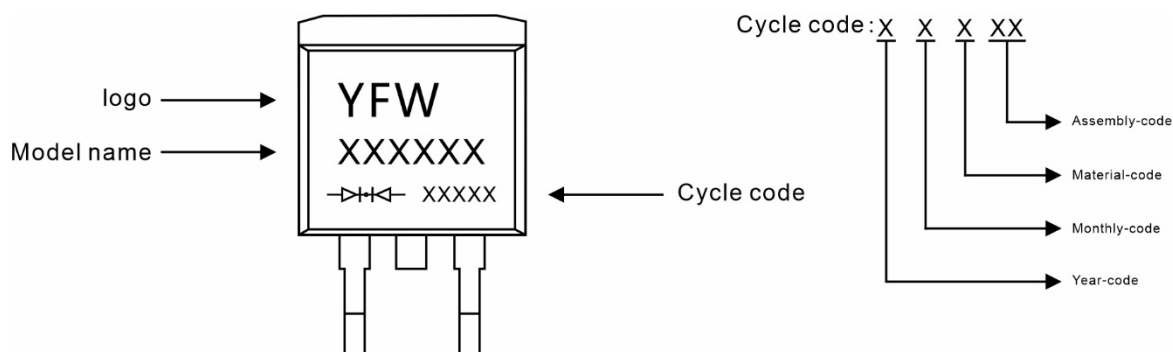
| Model name   | Package | Unit Weight   | Base Quantity | Packing Quantity           |
|--------------|---------|---------------|---------------|----------------------------|
| SRT20V120FCT | TO-220F | 0.06oz(1.74g) | 50pcs/tube    | 1000PCS/Box 5000PCS/Carton |

## Package Dimensions

### TO-220F

| Symbol | Millimeter |       | Inches |       |
|--------|------------|-------|--------|-------|
|        | Min.       | Max.  | Min.   | Max.  |
| A      | 4.50       | 4.90  | 0.177  | 0.193 |
| A1     | 2.34       | 2.74  | 0.092  | 0.108 |
| A2     | 2.66       | 2.86  | 0.105  | 0.113 |
| b      | 0.75       | 0.85  | 0.030  | 0.033 |
| b1     | 1.24       | 1.44  | 0.049  | 0.057 |
| c      | 0.40       | 0.60  | 0.016  | 0.024 |
| D      | 10.00      | 10.32 | 0.394  | 0.406 |
| E      | 15.75      | 16.05 | 0.620  | 0.632 |
| e      | 2.44       | 2.64  | 0.096  | 0.104 |
| e1     | 4.88       | 5.28  | 0.192  | 0.208 |
| F      | 3.10       | 3.5   | 0.122  | 0.138 |
| L      | 13.50      | 13.90 | 0.531  | 0.547 |
| L1     | 2.90       | 3.30  | 0.114  | 0.130 |
| Φ      | 3.10       | 3.30  | 0.122  | 0.130 |

## Marking Diagram



## Ordering information

| Model name  | Package | Unit Weight   | Base Quantity | Packing Quantity           |
|-------------|---------|---------------|---------------|----------------------------|
| SRT20V120DC | TO-263  | 0.04oz(1.16g) | 800pcs/reel   | 1600pcs/box 8000pcs/Carton |

## Package Dimensions

### TO-263

| Dim | Millimeter |       | Inches |       |
|-----|------------|-------|--------|-------|
|     | Min.       | Max.  | Min.   | Max.  |
| A   | 4.30       | 4.70  | 0.169  | 0.185 |
| A1  | 0.00       | 0.15  | 0.000  | 0.006 |
| A2  | 4.30       | 4.55  | 0.169  | 0.179 |
| B   | 1.10       | 1.50  | 0.043  | 0.059 |
| b   | 0.70       | 0.90  | 0.028  | 0.035 |
| b1  | 1.20       | 1.50  | 0.047  | 0.059 |
| c   | 0.30       | 0.60  | 0.012  | 0.024 |
| c1  | 1.17       | 1.37  | 0.046  | 0.054 |
| D   | 9.90       | 10.20 | 0.390  | 0.402 |
| E   | 8.50       | 8.90  | 0.335  | 0.350 |
| e   | 2.44       | 2.64  | 0.096  | 0.104 |
| e1  | 4.88       | 5.28  | 0.192  | 0.208 |
| L   | 15.00      | 15.30 | 0.591  | 0.602 |
| L1  | 5.20       | 5.40  | 0.205  | 0.213 |
| L2  | 2.40       | 2.60  | 0.094  | 0.102 |
| L3  | 1.60       | 1.80  | 0.063  | 0.071 |

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