

# Product Specification

Number: QRD60U20DK-(TO-247)  
Name: Ultra fast recovery rectifier  
Specification: \_\_\_\_\_  
Customer: \_\_\_\_\_  
Date: 2024-06-05

Customer Signature:



**NINGBO KLS ELECTRONIC CO; LTD**

**Tel : 0086-574-86828566**

**Fax : 0086-574-86824882**

**ADD : NO. 8-1, RONGXIA RD. XIAPU SHANQIAN  
INDUSTRIAL ZONE BEILUN NINGBO ZHEJIANG.**

Compile	Check	Review	Approval
Jenny	Jack.C		

**FRED**
**Ultrafast Soft Recovery Diode, 200V, 30A×2**
**Description:**

These diodes are optimized to less losses and EMI/RFI in high frequency power conditioning system. The soft recovery character of the diodes offers buffer in most applications. These devices are suited for power converters and other applications where the switching losses are not significant portion of the total losses.

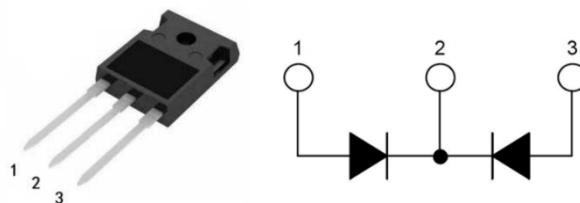
**Features:**

- Ultrafast Recovery
- 175°C operating junction temperature
- High frequency operation
- Low IR value
- High surge capacity
- Epitaxial chip construction

Product Summary	
$V_R$	200 V
$I_{F(AV)}$	2×30 A
$t_{rr}$	35 ns

**Applications:**

- Switched mode power supply
- Inverter welding
- Uninterruptible power supplies (UPS)


**Absolute Maximum Ratings**

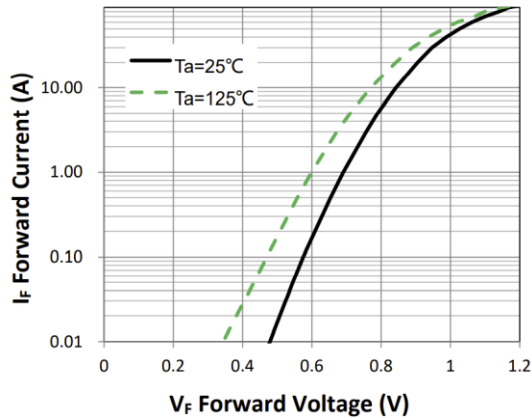
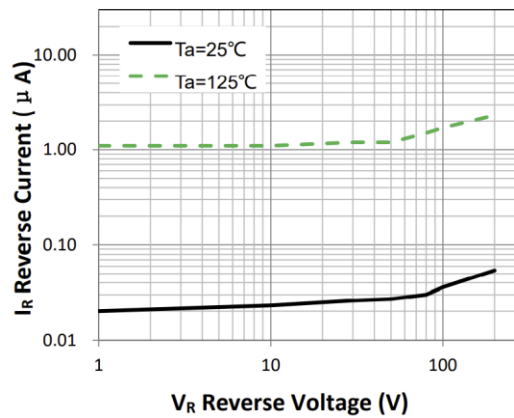
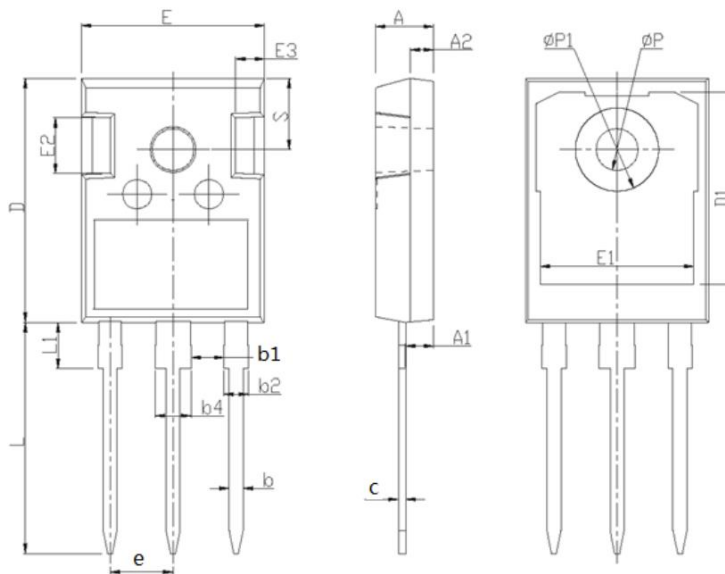
Parameter	Symbol	Test Conditions	Values	Units
Repetitive peak reverse voltage	$V_{RRM}$		200	V
Continuous forward current	$I_{F(AV)}$	$T_A=110^\circ\text{C}$	60	A
Single pulse forward current	$I_{FSM}$	$T_A=25^\circ\text{C}$	360	A
Maximum repetitive forward current	$I_{FRM}$	Square wave, 20kHz	240	A
Operating junction	$T_j$		175	°C
Storage temperatures	$T_{stg}$		-55 to +175	°C

**Electrical characteristics ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Breakdown voltage	$V_{BR}$	$I_R=100\mu\text{A}$	200			V
Blocking voltage	$V_R$					
Forward voltage	$V_F$	$I_F=30\text{ A}$		0.95	1.10	V
		$I_F=30\text{ A}, T_j=125^\circ\text{C}$		0.89	1.00	V
Reverse leakage current	$I_R$	$V_R=V_{RRM}$			20	$\mu\text{A}$
		$T_j=150^\circ\text{C}, V_R=200\text{V}$			200	$\mu\text{A}$
Reverse recovery time	$t_{rr}$	$I_F=0.5\text{A}, I_R=1\text{A}, I_{RR}=0.25\text{A}$			35	ns
		$I_F=1\text{A}, V_R=30\text{V}, di/dt=200\text{A}/\mu\text{s}$		24	35	ns

**Thermal characteristics**

Parameter	Symbol	Typ	MAX	Units
Junction-to-Case	$R_{thJC}$	-	0.70	°C/W


**Figure 1. Forward Characteristic(typ.)**

**Figure 2. Reverse Characteristic (typ.)**
**Package Information**
**TO-247 PACKAGE**


Symbol	Dimensions(millimeters)	
	Min.	Max.
A	4.80	5.20
A1	2.21	2.61
A2	1.85	2.15
b	1.10	1.30
b1	2.55	2.85
b2	1.90	2.15
c	0.50	0.75
D	20.70	21.30
D1	16.25	16.85
e	5.25	5.65
E	15.60	16.00
E1	13.06	13.46
E2	4.80	5.20
E3	1.80	2.50
L	19.62	20.22
L1	4.00	4.30
$\Phi P$	3.40	3.80
$\Phi P1$	7.00	7.30
S	5.95	6.35

**Notice:**

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