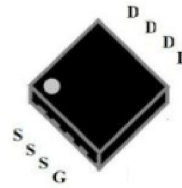
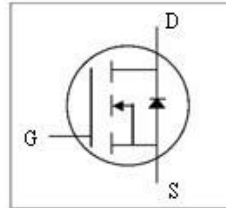


»Features

- Simple Drive Requirement
- Small Size & Low RDS(ON)
- RoHS Compliant & Halogen-Free

BVDSS	30 V
RDS(ON)typ	6.5 mΩ
ID	15.5 A

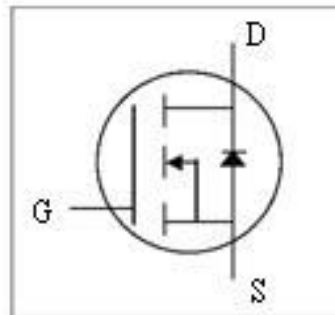


PDFN3\*3

»Description

CT03NR007Q is from Coretong innovated design and silicon process technology to achieve the lowest possible on-resistance and fast switching performance. It provides the designer with an extreme efficient device for use in a wide range of power applications.

»Schematic & PIN Configuration



PDFN3x3

**»Absolute Maximum Ratings@T<sub>J</sub>=25°C(unless otherwise specified)**

Symbol	Parameter	Rating	Units
V <sub>DS</sub>	Drain-Source Voltage	30	V
V <sub>GS</sub>	Gate-Source Voltage	±20	V
I <sub>D</sub> @T <sub>A</sub> =25°C	Drain Current, V <sub>GS</sub> @ 10V <sub>3</sub>	15.5	A
I <sub>D</sub> @T <sub>A</sub> =70°C	Drain Current, V <sub>GS</sub> @ 10V <sub>3</sub>	12.4	A
I <sub>DM</sub>	Pulsed Drain Current <sup>1</sup>	60	A
P <sub>D</sub> @T <sub>A</sub> =25°C	Total Power Dissipation	3.2	W
T <sub>STG</sub>	Storage Temperature Range	-55 to 150	°C
T <sub>J</sub>	Operating Junction Temperature Range	-55 to 150	°C

**»Thermal Data**

Symbol	Parameter	Value	Unit
R <sub>thj-c</sub>	Maximum Thermal Resistance, Junction-case	5	°C/W
R <sub>thj-a</sub>	Maximum Thermal Resistance, Junction-ambient <sub>3</sub>	35	°C/W

**»Electrical Characteristics@T<sub>J</sub>=25 °C(unless otherwise specified)**

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
BV <sub>DSS</sub>	Drain-Source Breakdown Voltage	V <sub>GS</sub> =0V, I <sub>D</sub> =250uA	30	-	-	V
R <sub>DS(ON)</sub>	Static Drain-Source On-Resistance <sub>2</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =12A	-	6.5	8.5	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =8A	-	10.8	13	mΩ
V <sub>GS(th)</sub>	Gate Threshold Voltage	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250uA	1	1.3	3	V
g <sub>fs</sub>	Forward Transconductance	V <sub>DS</sub> =10V, I <sub>D</sub> =12A	-	24	-	S
I <sub>DSS</sub>	Drain-Source Leakage Current	V <sub>DS</sub> =24V, V <sub>GS</sub> =0V	-	-	10	uA
I <sub>GSS</sub>	Gate-Source Leakage	V <sub>GS</sub> =±20V, V <sub>DS</sub> =0V	-	-	±100	nA
Q <sub>g</sub>	Total Gate Charge <sub>2</sub>	I <sub>D</sub> =12A	-	12	-	nC
Q <sub>gs</sub>	Gate-Source Charge	V <sub>DS</sub> =15V	-	6	-	nC
Q <sub>gd</sub>	Gate-Drain ("Miller") Charge	V <sub>GS</sub> =4.5V	-	5.5	-	nC
t <sub>d(on)</sub>	Turn-on Delay Time	V <sub>DS</sub> =15V	-	10	-	ns
t <sub>r</sub>	Rise Time	I <sub>D</sub> =1A	-	5	-	ns
t <sub>d(off)</sub>	Turn-off Delay Time	R <sub>G</sub> =3.3Ω	-	27	-	ns
t <sub>f</sub>	Fall Time	V <sub>GS</sub> =10V	-	7	-	ns
C <sub>iss</sub>	Input Capacitance	V <sub>GS</sub> =0V	-	1050	-	pF
C <sub>oss</sub>	Output Capacitance	V <sub>DS</sub> =15V	-	170	-	pF
Cr <sub>ss</sub>	Reverse Transfer Capacitance	f=1.0MHz	-	150	-	pF
R <sub>g</sub>	Gate Resistance	f=1.0MHz	-	2	-	Ω

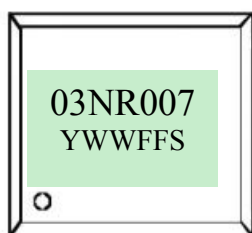
**»Source-Drain Diode**

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Units
V <sub>SD</sub>	Forward On Voltage <sup>2</sup>	I <sub>S</sub> =2.9A, V <sub>GS</sub> =0V	-	-	1.2	V
t <sub>rr</sub>	Reverse Recovery Time	I <sub>S</sub> =12A, V <sub>GS</sub> =0V	-	21	-	ns
Q <sub>rr</sub>	Reverse Recovery Charge	dI/dt=100A/μs	-	12	-	nC

**Notes:**

- 1.Pulse width limited by Max. junction temperature.
- 2.Pulse test
- 3.Surface mounted on 1 in<sup>2</sup> 2oz copper pad of FR4 board, t ≤10sec ; 135°C/W when mounted on min. copper pad.

**»Marking Information**



Package	PDFN3x3	
XXXX	Part Number	
PP	Package Code	
Y	Year	F=2020 , G=2021, .....
WW	Weeks	Ex. 10/27=44weeks, 11/3=45weeks
FF	Wafer lot	Lot No.
S	Serial	Serial No.
Dot	First pin	

» Typical Characteristics

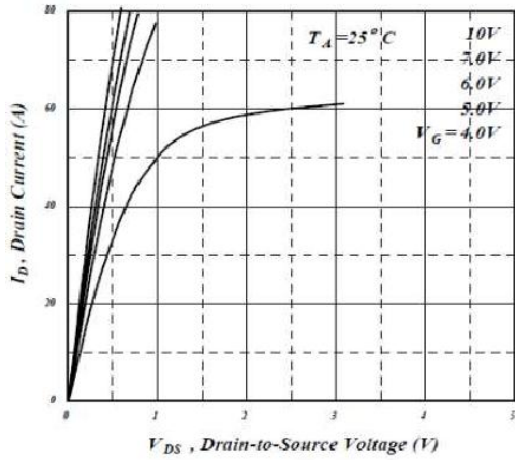


Fig 1. Typical Output Characteristics

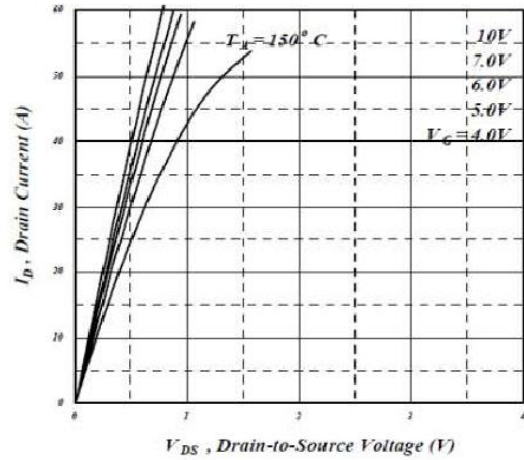


Fig 2. Typical Output Characteristics

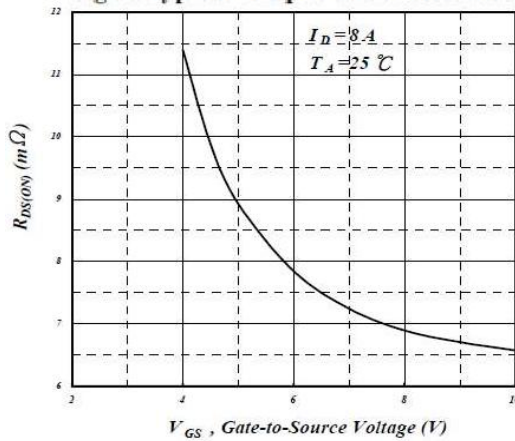


Fig 3. On-Resistance v.s. Gate Voltage

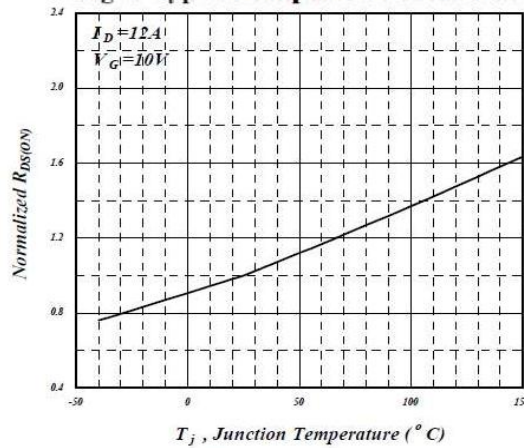


Fig 4. Normalized On-Resistance v.s. Junction Temperature

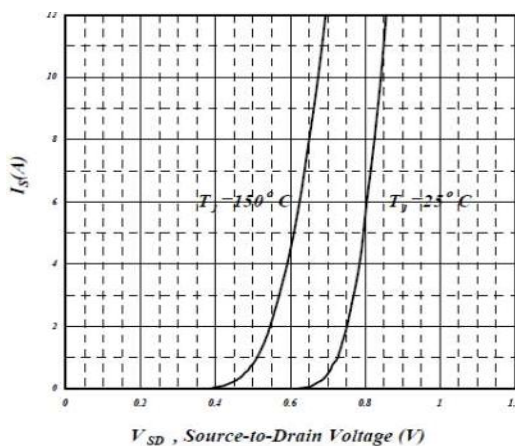


Fig 5. Forward Characteristic of Reverse Diode

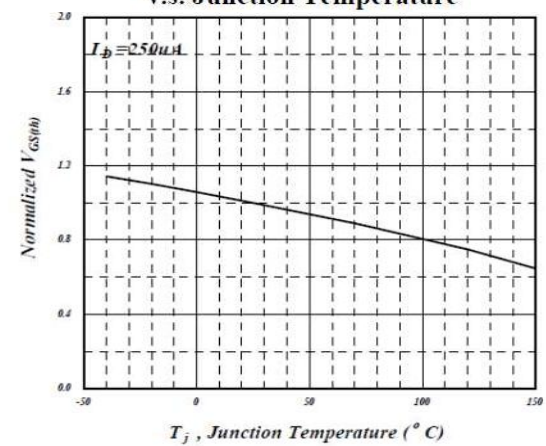


Fig 6. Gate Threshold Voltage v.s. Junction Temperature



