

BRC5060N04SZC

Rev.D Feb.-2025



DATA SHEET

PDFN5 6 / x N 3 « | o

N-Channel MOSFET in a PDFN5x6 Plastic Package.

)
 $V_{DS}(V)=60\text{ V}$ $I_D=60\text{ A}$
 $R_{DS(ON)}@10\text{ V } 6\text{ m } \checkmark$ (Typ. 5.6m)
 $R_{DS(ON)}@4.5\text{ V } 9\text{ m}$ (Typ.7.8m

Absolute Maximum Ratings(T_a=25 ;)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DSS}	40	V
Drain Current	I _D (T _c =25)	60	A
Drain Current - Pulsed	I _{DM}	120	A
Gate-Source Voltage	V _{GS}	±20	V
Single Pulsed Avalanche Energy	E _{AS}	78.5	mJ
Avalanche Current	I _{AS}	15	A
Power Dissipation	P _D (T _c =25)	37	W
Operating and Storage Temperature Range	T _J , T _{stg}	-55 to 150	
Thermal resistance, junction - ambient	t 0 10s	R _{θJA}	25
	Steady-State		55
Thermal resistance, junction - case	Steady-State	R _{θJC}	3.4

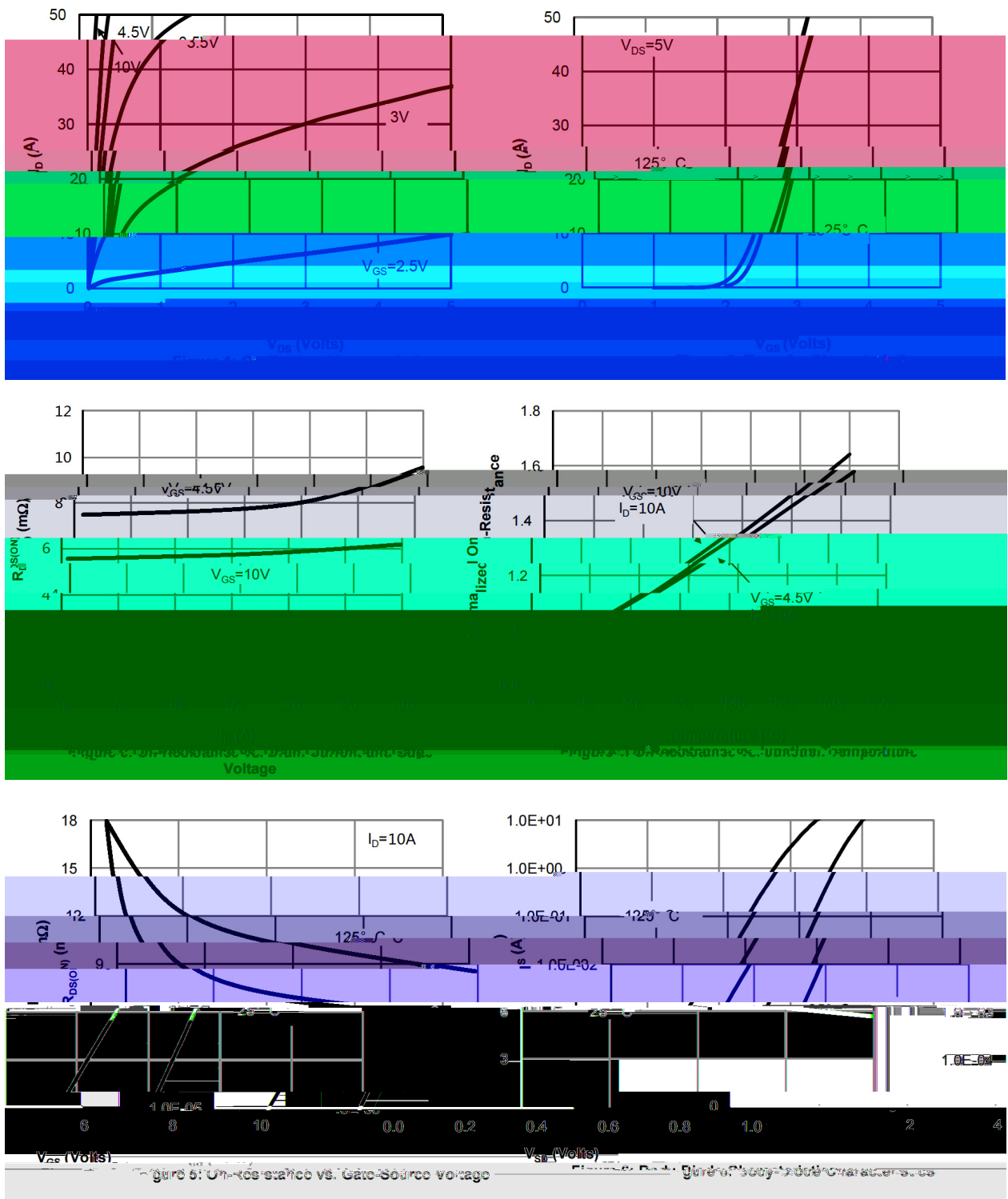
Electrical Characteristics(T_a=25 ;)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =250 A	40	46		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =40V V _{GS} =0V			1	A
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±20V V _{DS} =0V			±0.1	A
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =250 A	1.0	1.6	2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V I _D =20A		5.6	6	m
		V _{GS} =4.5V I _D =10A		7.8	9	m
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V I _S =1A			1.2	V
Input Capacitance	C _{iss}	V _{DS} =25V V _{GS} =0V f=1.0MHz		990		pF
Output Capacitance	C _{oss}			390		
Reverse Transfer Capacitance	C _{rss}			42		
Gate resistance	R _g	V _{GS} =0V V _{DS} =0V f=1MHz		5.2		
Total Gate Charge	Q _{g(10V)}	V _{GS} =10V V _{DS} =20V I _D =20A		20		nC
Total Gate Charge	Q _{g(4.5V)}			8.4		
Gate Source Charge	Q _{gs}			5.5		
Gate Drain Charge	Q _{gd}			3.0		

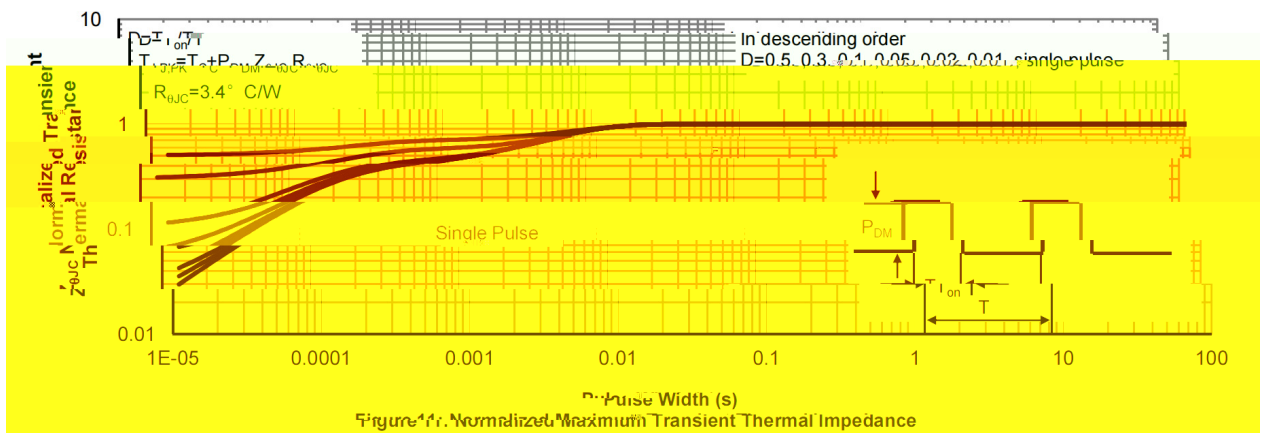
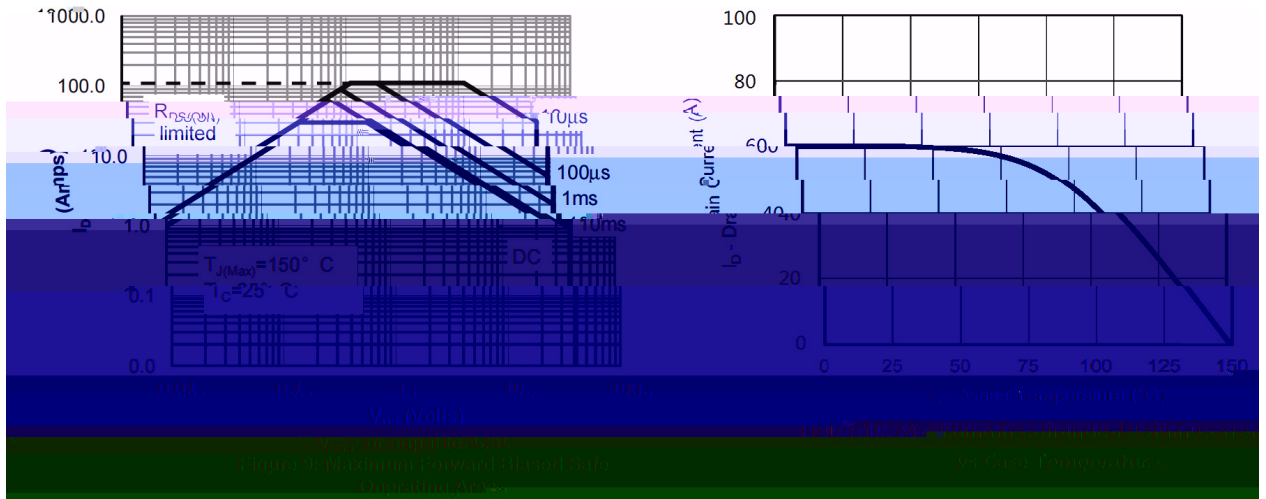
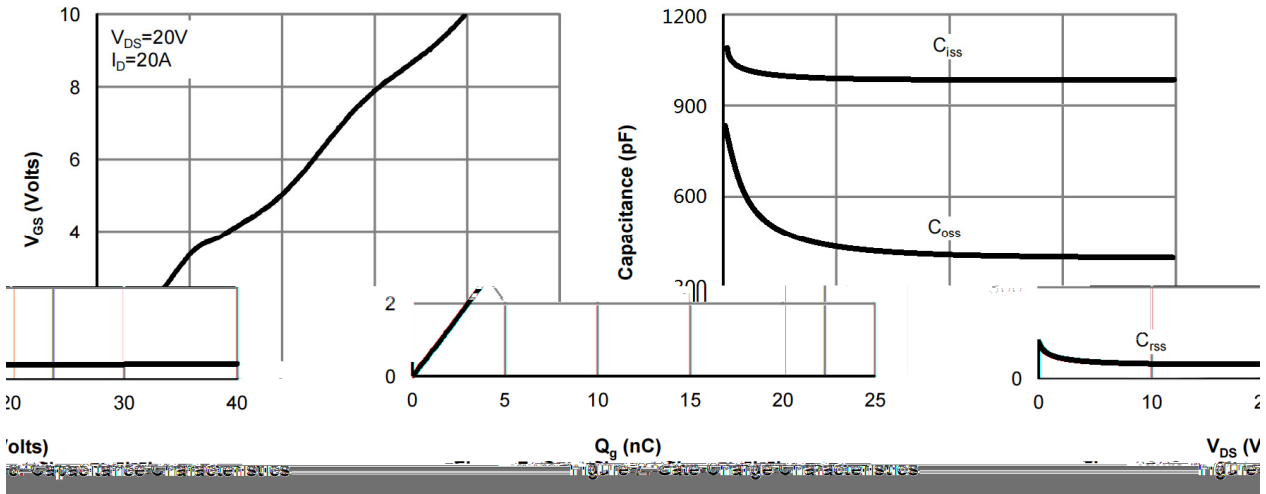
Electrical Characteristics(Ta=25 ;)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=1.0$ $R_{GEN}=3.0$		7.5		ns
Turn-On Rise Time	t_r			2		
Turn-Off Delay Time	$t_{d(off)}$			23.5		
Turn-Off Fall Time	t_f			3.2		
Reverse Recovery Time	t_{rr}	$I_F = 10A,$ $di_F/dt=200A/\mu S$		17		ns
Reverse Recovery Charge	Q_{rr}			15		nC

Electrical Characteristic Curve



Electrical Characteristic Curve



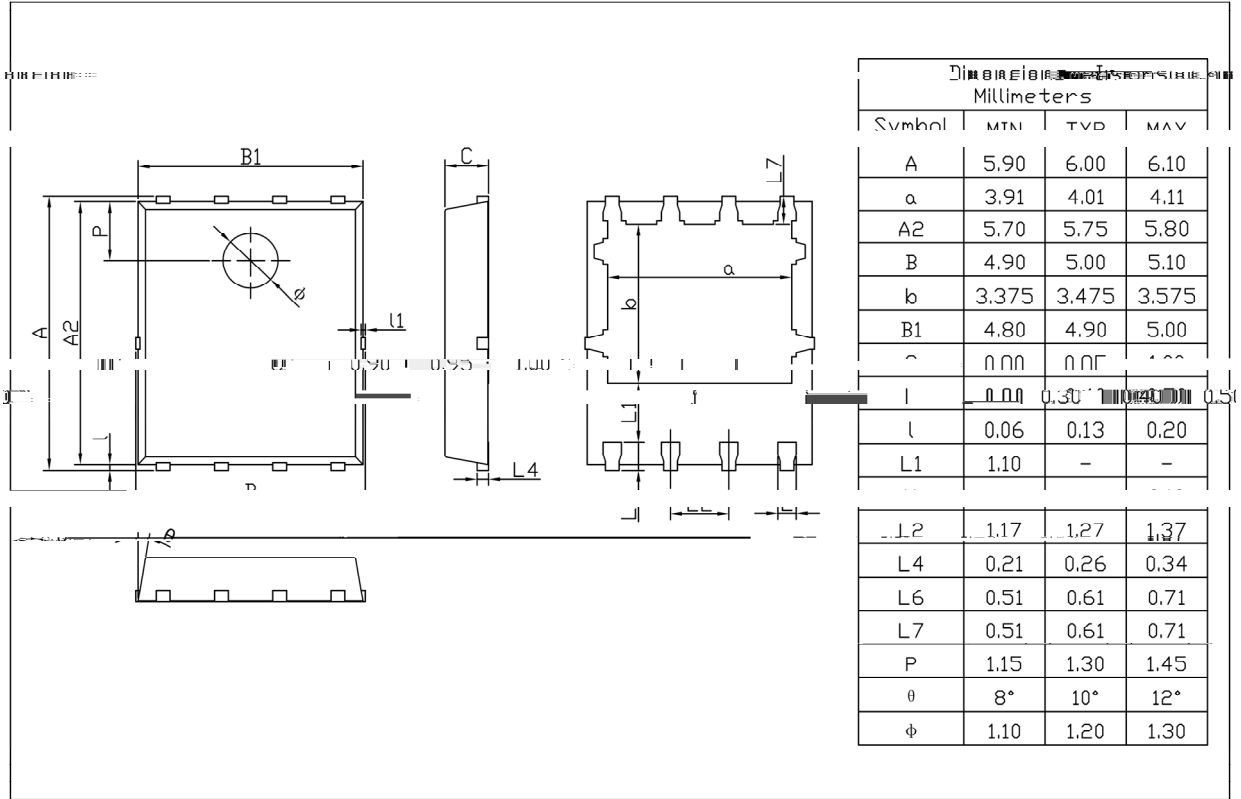
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Ø ≡) ϕ / Package Dimensions

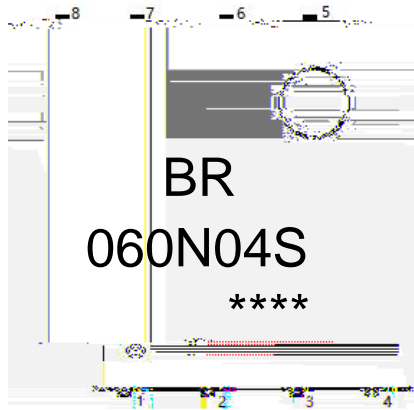
PDFN5 × 6

Unit:mm



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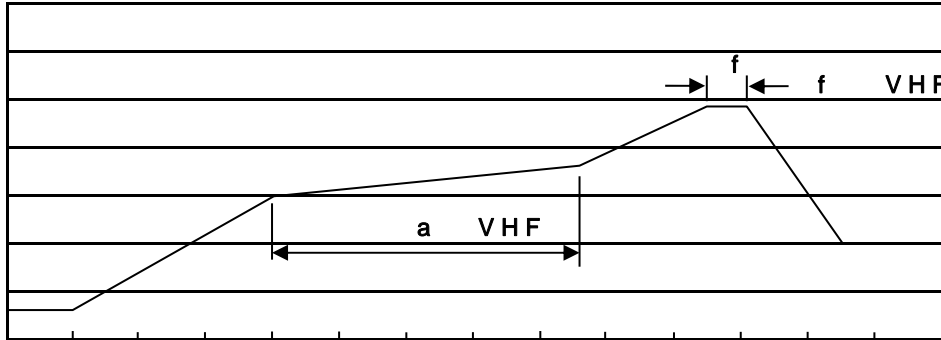
, M y f / Marking Instructions



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(8 y , [W A
060N04S y " Z W A
y ¨D Z W A k ¨D Z J
Note y
BR y Company Code
060N04S y Product Type Code
****: Lot No. Code, code change with Lot No

šWD t...•Žç (x/) / :KSVKXGZ[XK 6XULORK LUX /8 8KLRU] 9URJKXOTM 6

7HPSHUDWXUH



7LPH VHF

"ç y

- 1o ~ %o 150 %180 - k 60 %90sec;
- 2o Q 245 r5 - k 4 Ò 5 r0.5sec;
- 3o D N ò i ÒO , 2 %10 - /sec.

Note:

- 1.Preheating:150~180 - , Time:60~90sec.
- 2.Peak Temp.:245 r5 - , Duration:5 r0.5sec.
- 3. Cooling Speed: 2~10 - /sec.

ÂD /Cã p ~ »] / Resistance to Soldering Heat Test Conditions

y 260 r5 - y 10 r1 sec. Temp.:260±5 Time:10±1 sec

G P á / Packaging SPEC.

2 & x / REEL

Package Type / x ¥	Units ;>û iH					Dimension ;>û p . (unit /Enm ³)		
	Units/Reel Q 2 &	Reels/Inner Box 2 & "	Units/Inner Box Q "	Inner Boxes/Outer Box "	Units/Outer Box Q	Reel	Inner Box'	Outer Box
PDFN5x6	5,000	2	10,000	6	60,000	13"x12	360x360x50	380x335x366

„Đ y f / Notices