

BRCS060N04SZC

Rev.D Feb.-2025



DATA SHEET

PDFN5 6x6 N-MOSFET

N-Channel MOSFET in a PDFN5x6 Plastic Package.

$V_{DS}(V)=60\text{ V}$ $I_D=60\text{ A}$

$R_{DS(ON)}@10\text{ V}$ 6mΩ (Typ. 5.6mΩ)

$R_{DS(ON)}@4.5\text{ V}$ 9mΩ (Typ. 7.8mΩ)

1 Absolute Maximum Ratings($T_a=25^\circ\text{C}$;)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V _{DSS}	40	V
Drain Current		I _D (T _c =25 °C)	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 °C)	37	W
Operating and Storage Temperature Range		T _J , T _{stg}	-55 to 150	
Thermal resistance, junction - ambient	t ≤ 10s	R _{θJA}	25	/ W
	Steady-State		55	
Thermal resistance, junction - case	Steady-State	R _{θJC}	3.4	

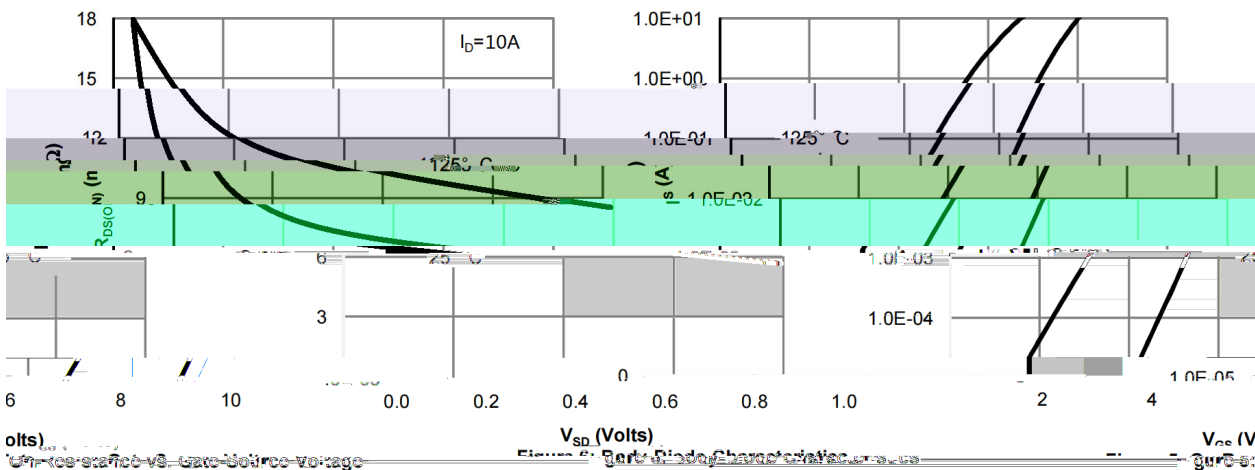
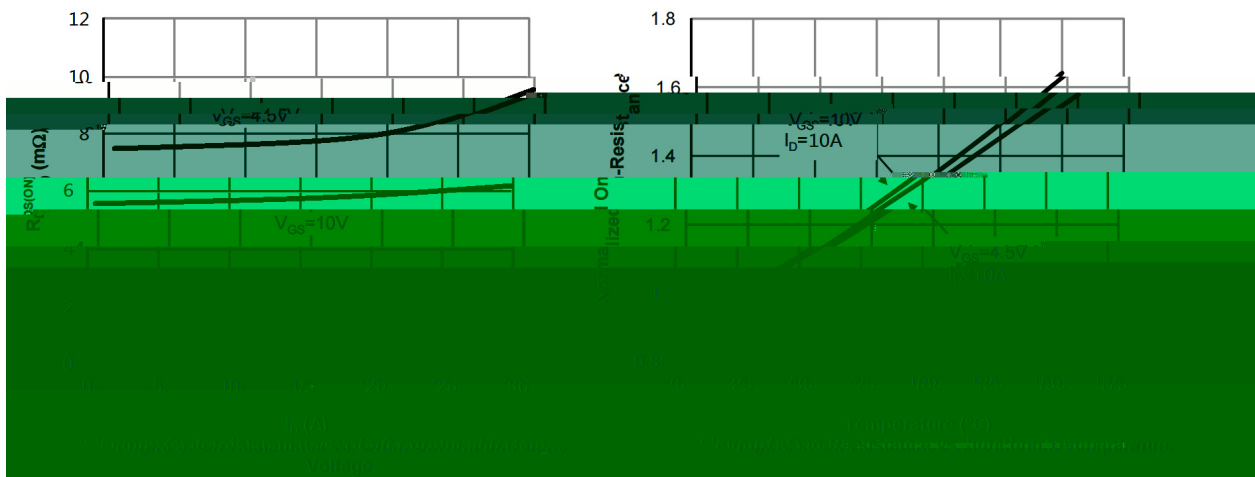
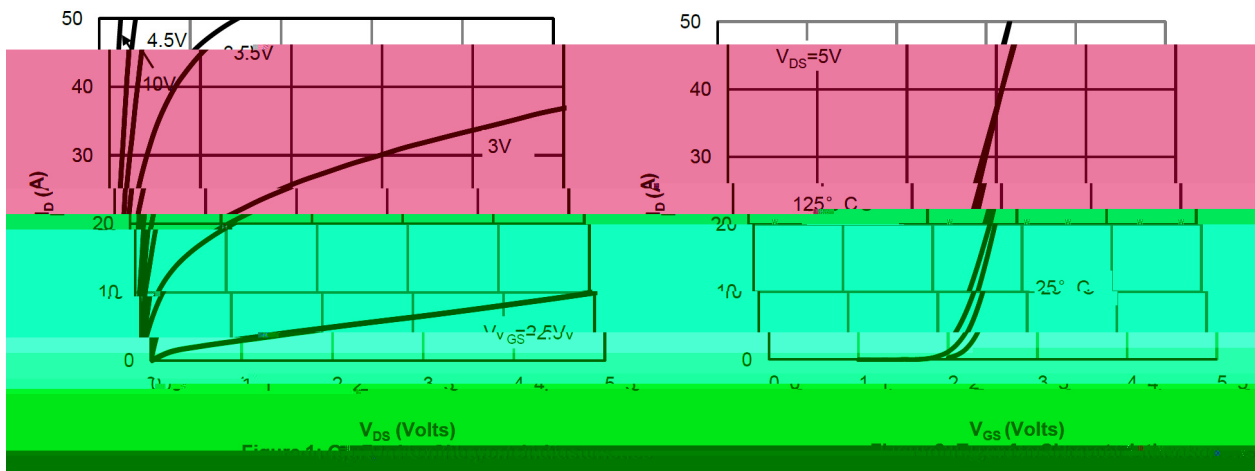
2 Electrical Characteristics($T_a=25^\circ\text{C}$;)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\mu A$	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}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	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 Ω
		$V_{GS}=4.5V$ $I_D=10A$		7.8	9	m Ω
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		

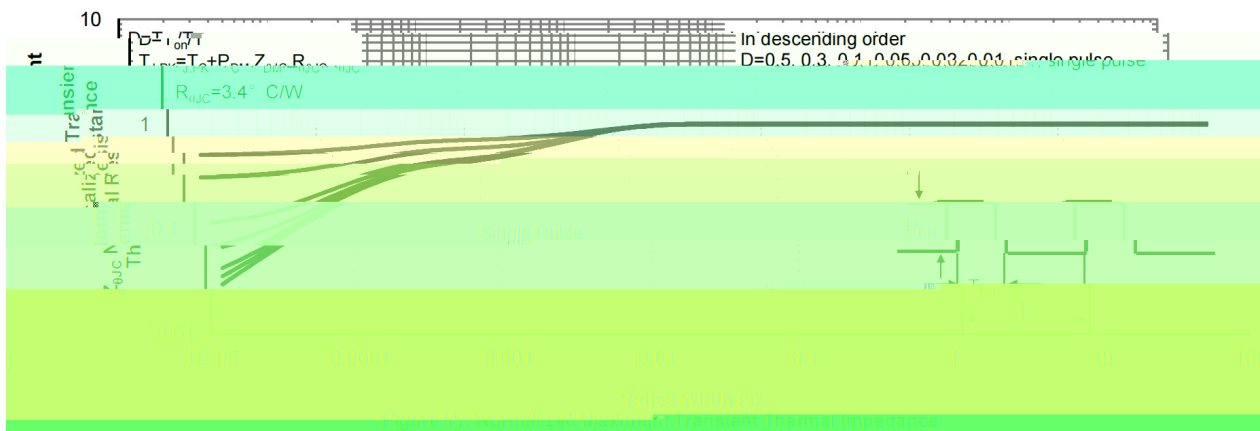
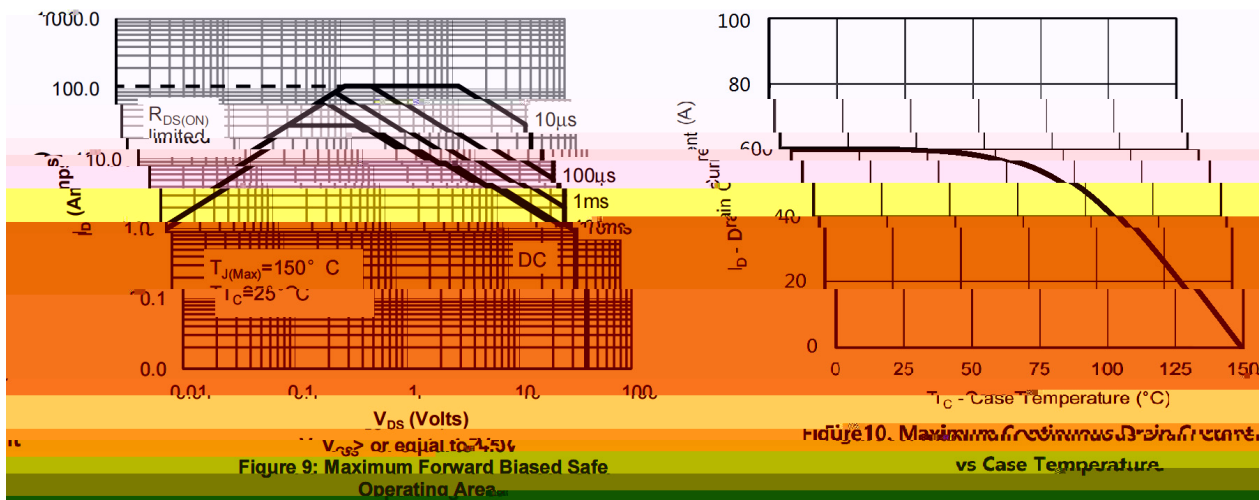
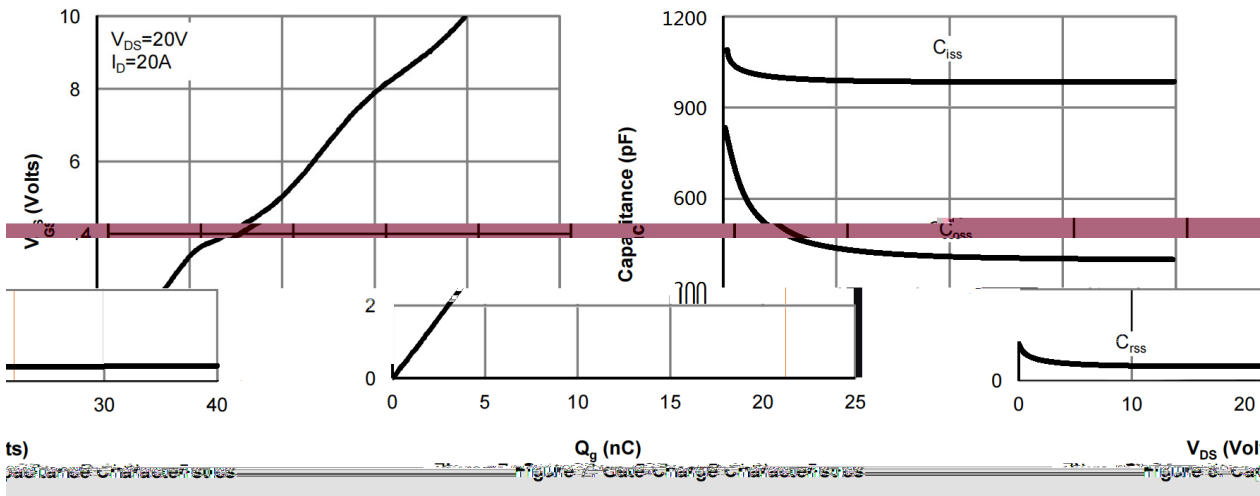
Electrical Characteristics(Ta=25 ;)

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/uS		17		ns
Reverse Recovery Charge	Q _{rr}			15		nC

Electrical Characteristic Curve

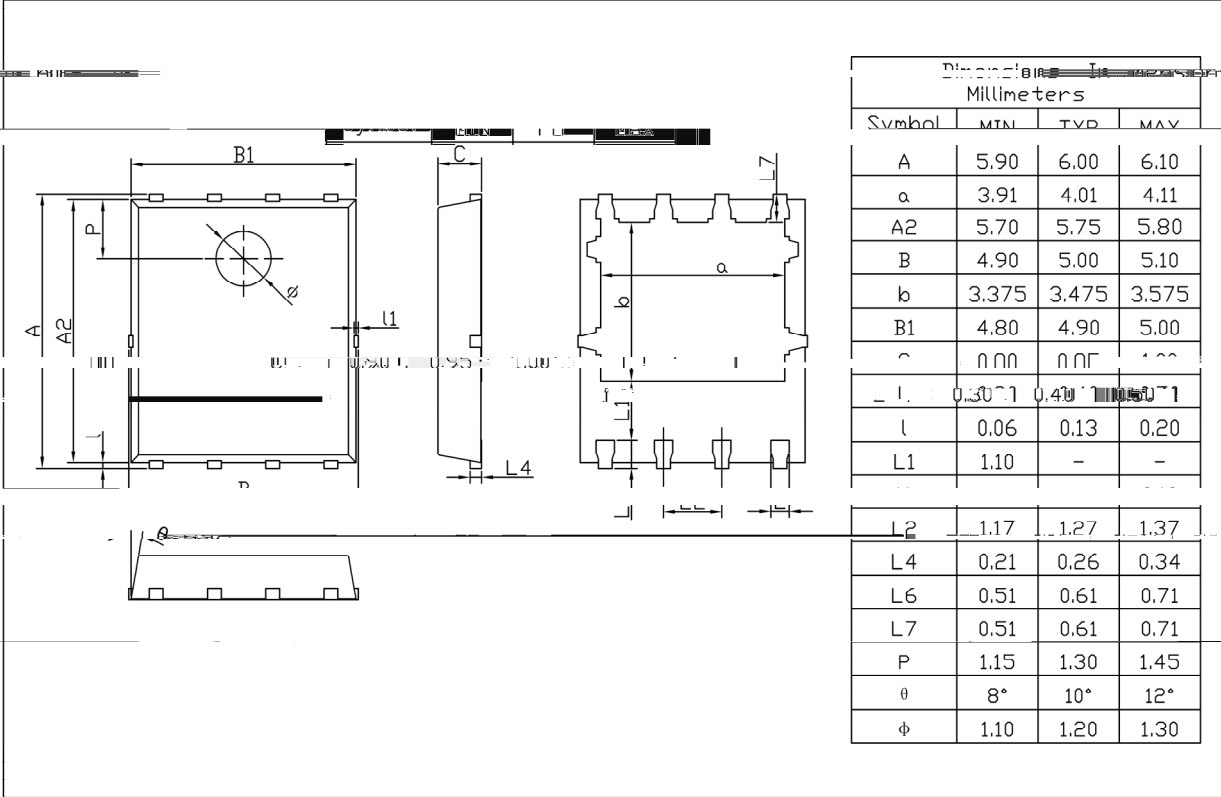


Electrical Characteristic Curve



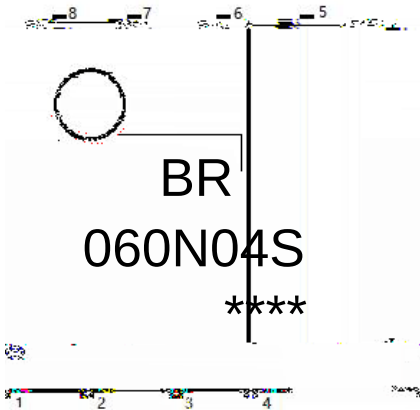
Ø □ =) ☉ / Package Dimensions

PDFN5 X6 Unit:mm



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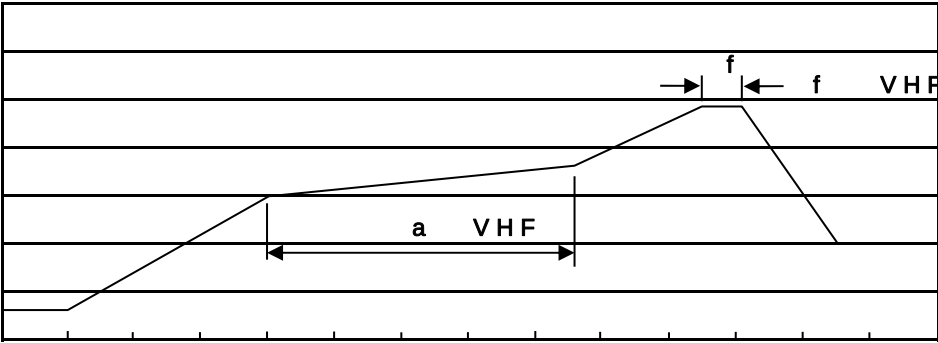
, M y f / Marking Instructions



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060N04Sy	Ⓢ
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Notey	
BRy	Company Code
060N04Sy	Product Type Code
****:	Lot No. Code, code change with Lot No

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7HPSHUDWXUH



7LPH VHF

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

Resistance to Soldering Heat Test Conditions

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

Packaging SPEC.

/ REEL

Package Type	Units ;>û H					Dimension ;>û p . (unit /mm³)		
	Units/Reel	Reels/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Reel	Inner Box	Outer Box
PDFN5×6	5,000	2	10,000	6	60,000	13"×12	360×360×50	380×335×366

Notices