

BRCS035N06SHDP

Rev.A Apr.-2024

/ Descriptions

TO-252 N

N-CHANNEL MOSFET in a TO-252 Plastic Package.

/ Features

$V_{DS} (V) = 60V$ $I_D = 132A$ ($V_{GS} = \pm 20V$)

$R_{DS(ON)} @ 10V \leq 3.6m\Omega$ (Typ. $3.45m\Omega$)

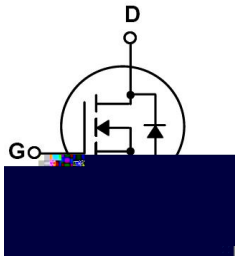
HF Product.

/ Applications

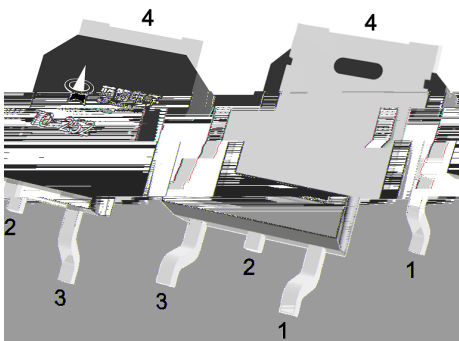
DC/DC

Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

/ Equivalent Circuit



/ Pinning



PIN1 G

PIN 2 D

PIN 3 S

PIN 4 D

/ Marking

See Marking Instructions.

/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	132	A
Drain Current - Pulsed		I_{DM}	296	A
Gate-Source Voltage		V_{GS}	± 20	V
Avalanche Current		I_{AS}	44	A
Single Pulsed Avalanche Energy(L=0.5mH)		E_{AS}	677.6	mJ
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	113	W
Storage Temperature Range		T_{stg}	-55 ~ 150	
Thermal Resistance-Junction to Ambient	$t \leq 10s$	$R_{\theta JA}$	20	/W
	Steady-State		50	
Thermal Resistance-Junction to Case	Steady-State	$R_{\theta JC}$	1.1	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DS}	$V_{GS}=0V$ $I_D=250\mu A$	60	69		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V$ $V_{GS}=0V$			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\mu A$	2.0	3.0	4.0	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		3.45	3.6	m Ω
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=1A$			1.2	V
Gate resistance	R_g	$V_{GS}=0V$ $V_{DS}=0V$, $f=1MHz$		1.0		Ω
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		4380		pF
Output Capacitance	C_{oss}			1350		
Reverse Transfer Capacitance	C_{rss}			75		
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$, $V_{DS}=30V$, $I_D=20A$		43		nC
Gate Source Charge	Q_{gs}			13.1		
Gate Drain Charge	Q_{gd}			10.5		

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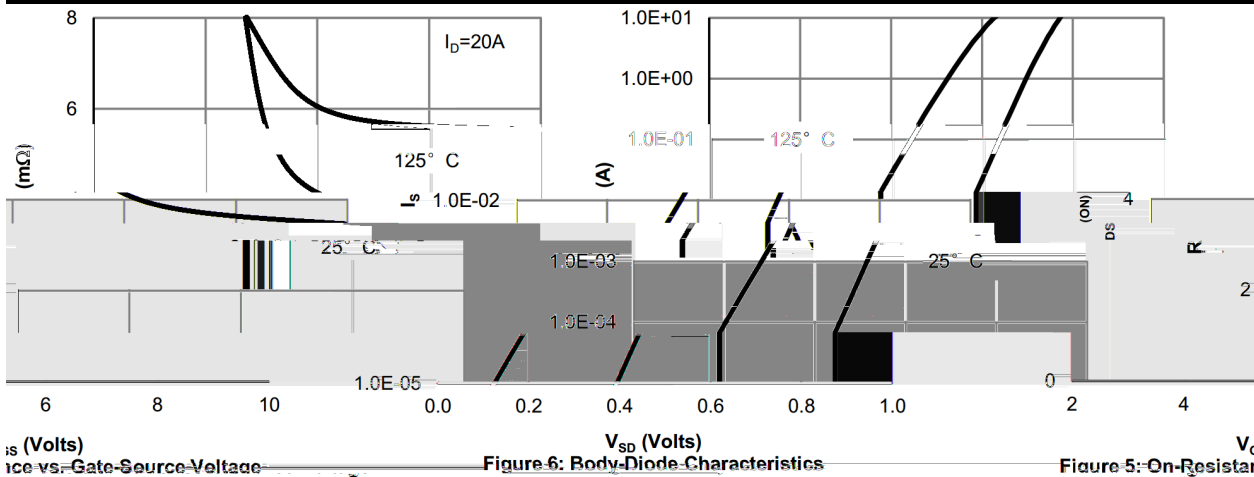
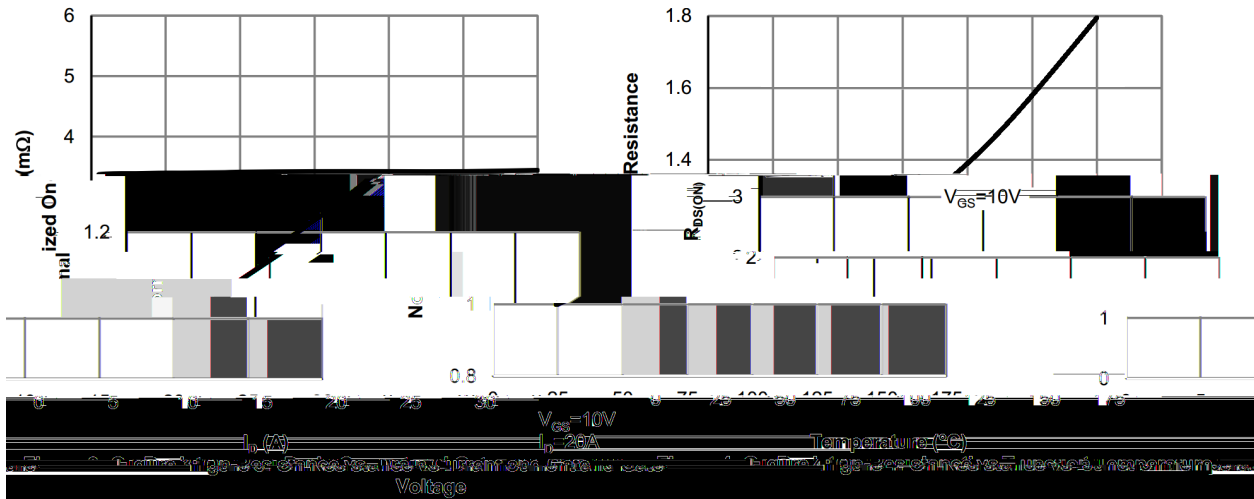
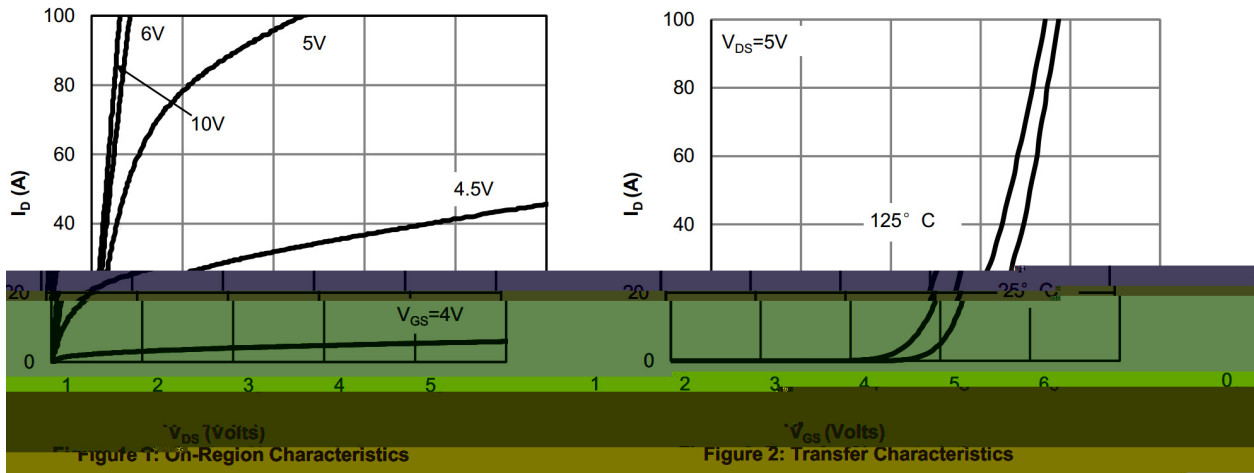
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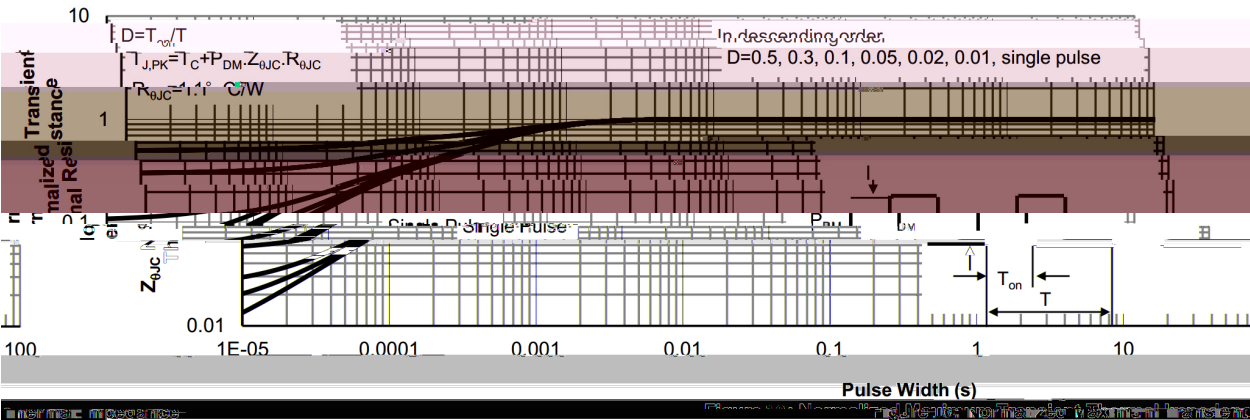
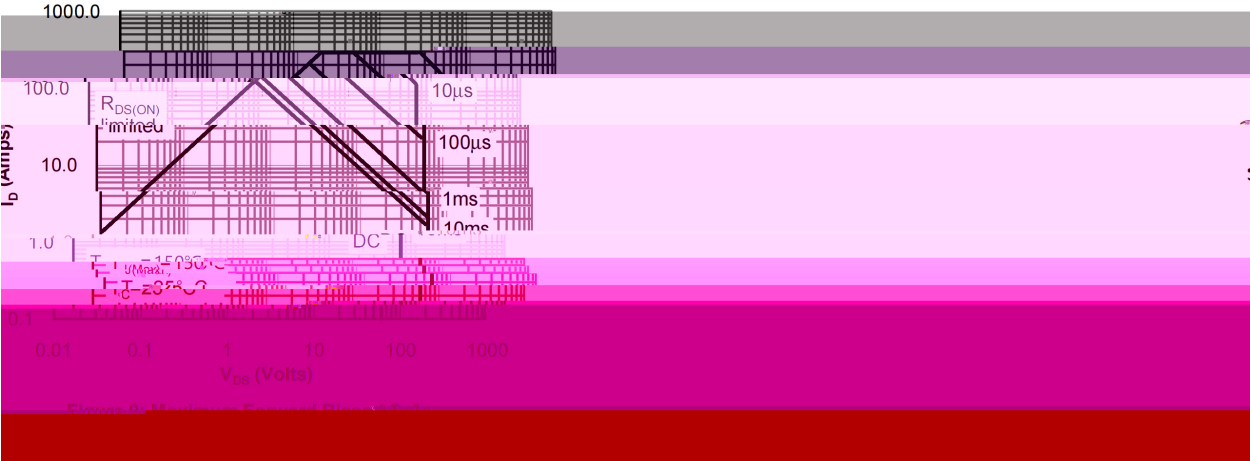
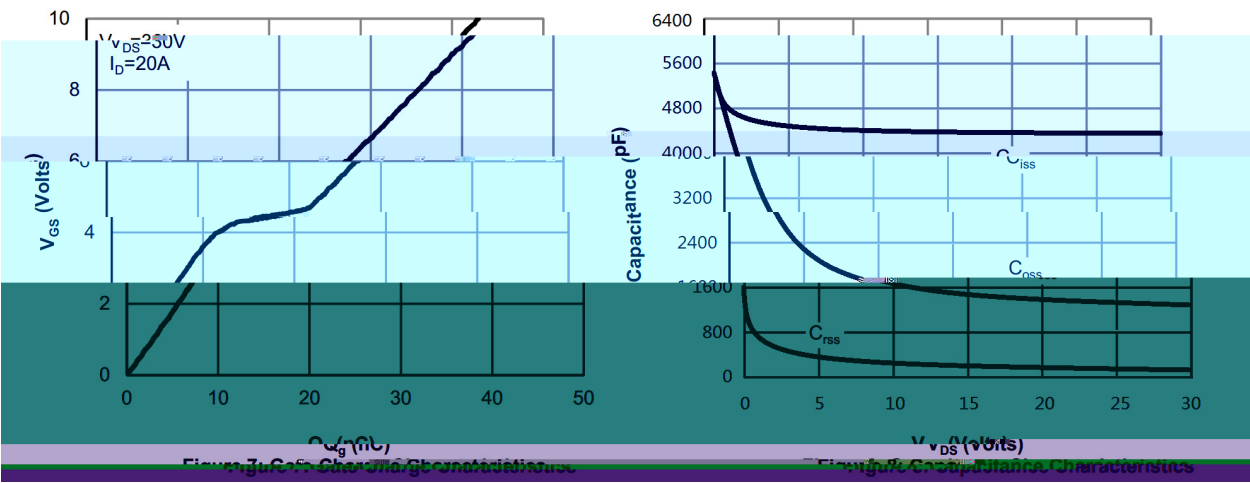
DATA SHEET

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$			15.2		
Turn-On Rise Time		$V_{GS}=10V$ $V_{DS}=30V$ $R_L=1.5\Omega$ $R_{GEN}=3\Omega$				ns

/ Electrical Characteristic Curve

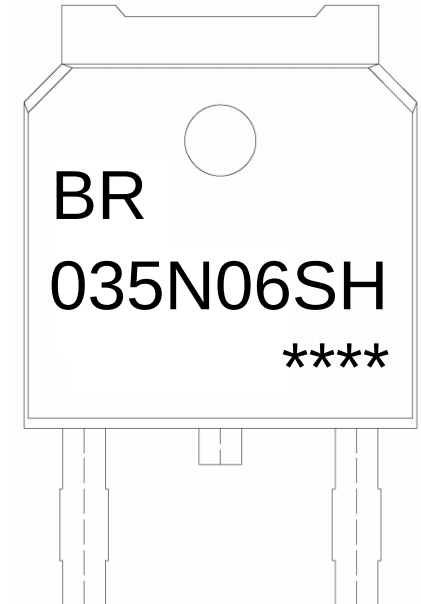


/ Electrical Characteristic Curve





/ Marking Instructions



BR

035N06SH

Note:

BR: Company Code

035N06SH: Product Type Code

****: Lot No. Code, code change with Lot No

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- Note:
- 1

150 180 60 90sec;

1.Preheating:150~180 , Time:60~90sec.
- 2

245±5 5±0.5sec;

2.Peak Temp.:245±5 , Duration:5±0.5sec.
- 3

2 10 /sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5 10±1 sec. Temp.:260±5 Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension (unit mm ³)		
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box