

# BRCS050N04DP

Rev.A Mar.-2026



DATA SHEET

TO-252

MOS

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

$V_{DS} = 40V$       $I_D = 78A$  ( $V_{GS} = \pm 20V$ )

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Parameter		Symbol	Rating	Unit
Drain-Source Voltage		$V_{DS}$	40	V
Drain Current		$I_D(T_c=25^\circ\text{C})$	78	A
Drain Current - Pulsed		$I_{DM}$	174	A
Gate-Source Voltage		$V_{GS}$	$\pm 20$	V
Single Pulsed Avalanche Energy		$E_{AS}$	841	mJ
Avalanche Current		$I_{AS}$	29	A
Power Dissipation		$P_D(T_c=25^\circ\text{C})$	55	W
Operating and Storage Temperature Range		$T_J, T_{stg}$	-55 to 150	
Junction-to-Ambient	$t = 10$	$R_{JA}$	20	/W
Junction-to-Ambient	Steady-State		50	
Junction-to-Case	Steady-State	$R_{JC}$	2.27	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$BV_{DSS}$	$V_{GS}=0V$ $I_D=250\text{ A}$	40	48.5		V
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=40V$ $V_{GS}=0V$			1	A
Gate-Body Leakage Current Forward	$I_{GSS}$	$V_{GS}=\pm 20V$ $V_{DS}=0V$			$\pm 0.1$	A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ A}$	1.0	1.4	2.5	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=10V$ $I_D=20A$		4.9	5.5	m
		$V_{GS}=4.5V$ $I_D=10A$		6.6	10	m
Drain-Source Diode Forward Voltage	$V_{SD}$	$V_{GS}=0V$ $I_S=1A$			1.2	V
Input Capacitance	$C_{iss}$	$V_{DS}=25V$ $V_{GS}=0V$ $f=1.0MHz$		3220		pF
Output Capacitance	$C_{oss}$			215		
Reverse Transfer Capacitance	$C_{rss}$			60		
Gate resistance	$R_g$	$V_{GS}=0V$ $V_{DS}=0V$ $f=1MHz$		2.3		
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10V$ $V_{DS}=20V$ $I_D=10A$		59.1		nC
Total Gate Charge	$Q_{g(4.5V)}$			28.3		

Gate Source Charge2 ref4.28261.1(Q)TJ.0172007.02 769.610011.8803 Tm0 Twrss

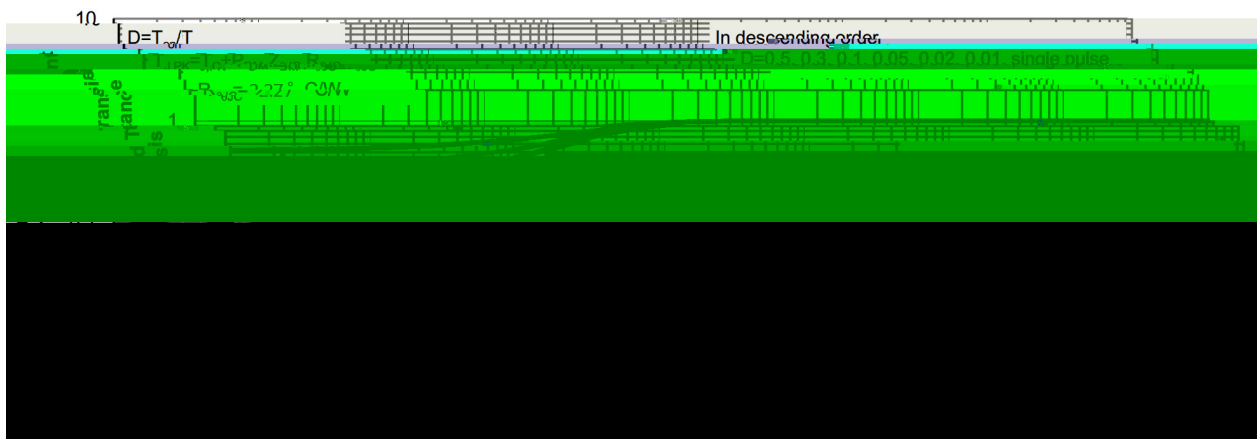
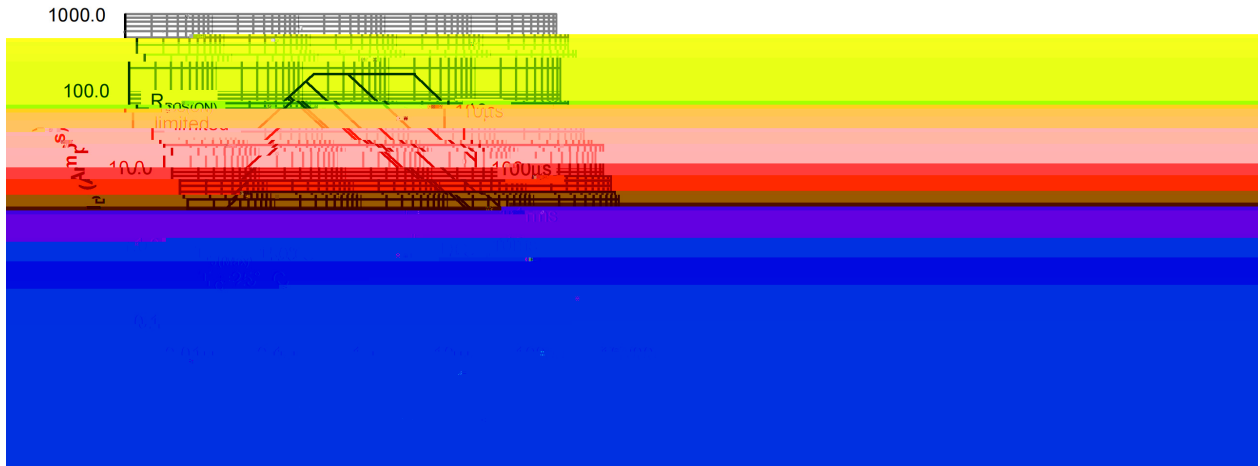
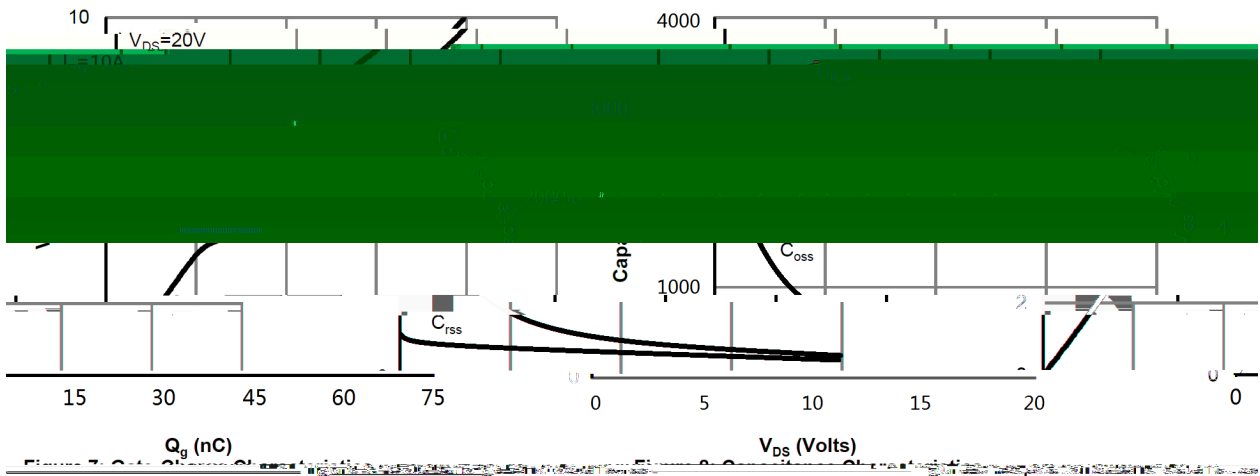
Parameter

# **BRCS050N04DP**

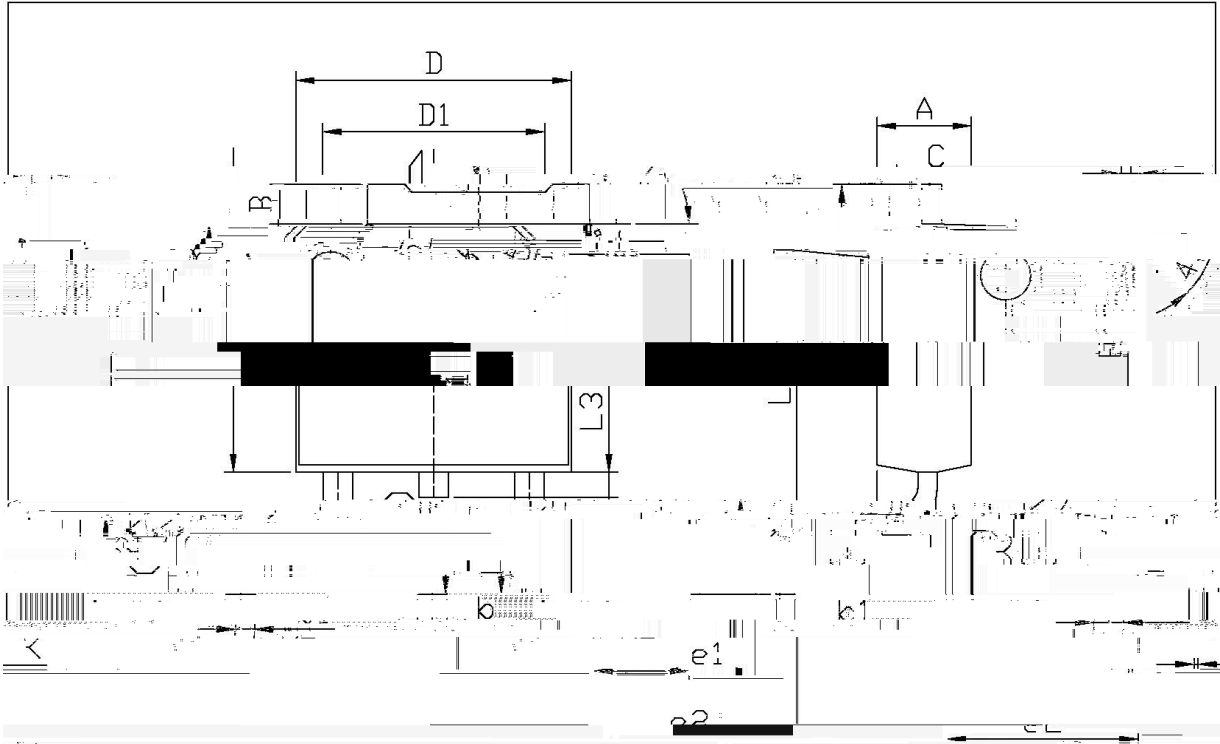
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**DATA SHEET**

**Electrical Characteristic Curve**



**/ Package Dimensions**



单位: mm

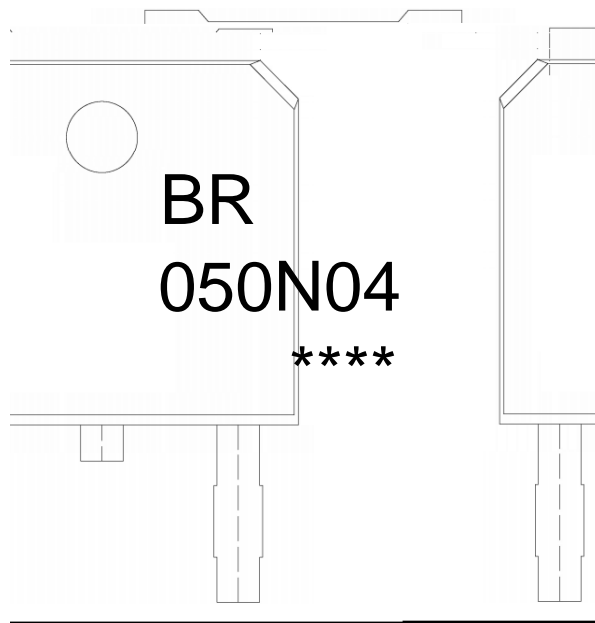
Dimensions	Min	Max	Dimensions	Min	Max
B	0.95	1.25	e1	2.24	2.34
L3	0.70	0.80	e2	4.73	4.73
b	0.51	0.55	CL	12.00	12.00
D	5.10	5.50	D1	5.10	5.50
A	0.60	0.70	C	0.70	0.70

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## / Marking Instructions



Note:

BR: Company Code

050N04: Product Type Code

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

