

BRCS035N04SDPQ

Rev.A Dec.-2023

/ Descriptions

TO-252 N

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

/ Features

$R_{DS(on)}$ C_{rSS} AEC-Q101

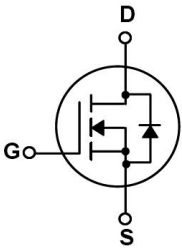
Low $R_{DS(on)}$, low gate charge, low C_{rSS} , fast switching, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

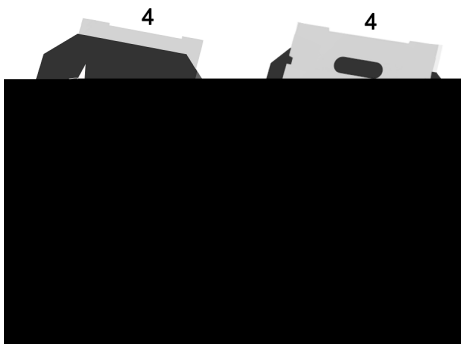
DC/DC

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

/ Equivalent Circuit



/ Pinning



PIN 1 G

PIN 2 D

PIN 3 S

PIN 4 D

/ Marking

See Marking Instructions.

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DATA SHEET

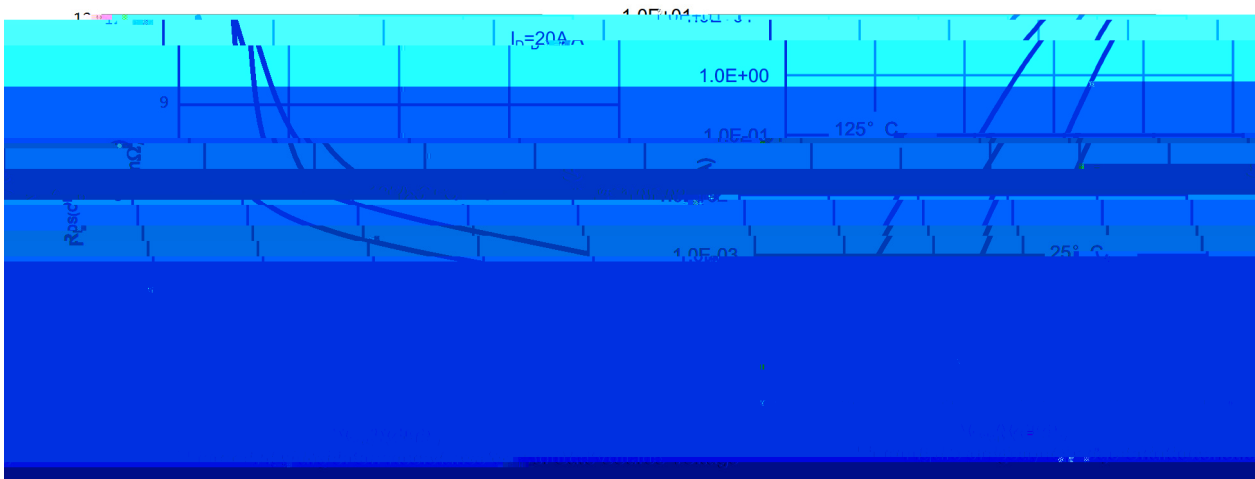
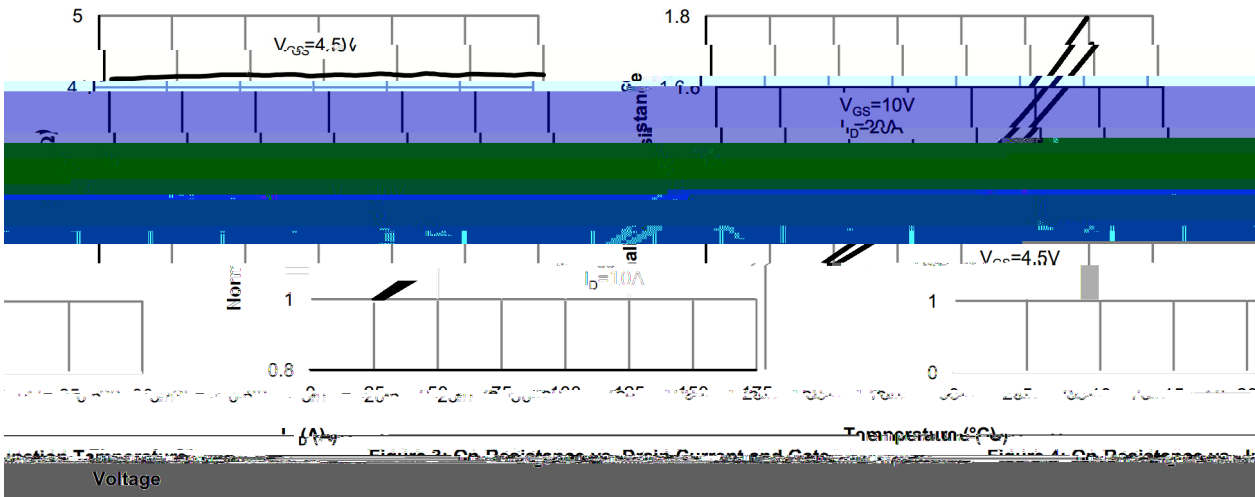
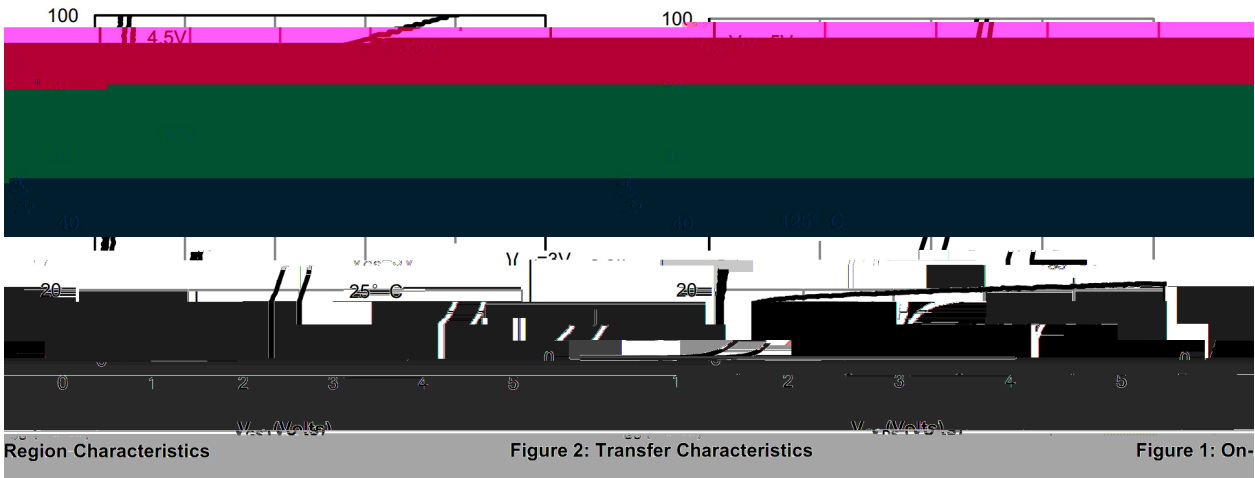
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	40	V
Drain Current		$I_D(T_C=25^\circ\text{C})$	136	A
Drain Current - Pulsed		I_{DM}	280	A
Gate-Source Voltage		V_{GS}	± 20	V
Avalanche Current		I_{AS}	33	A
Single Pulsed Avalanche Energy(L=0.5mH)		E_{AS}	435	mJ
Power Dissipation		$P_D(T_C=25^\circ\text{C})$	118	W
Junction and Storage Temperature Range		T_J, T_{STG}	-55 to 150	
Thermal Resistance-Junction to Ambient	t 10s	R_{JA}	20	/W
	Steady-State		50	
Thermal Resistance-Junction to Case	Steady-State	R_{JC}	1.06	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V$ $I_D=250\mu A$	40			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=40V$ $V_{GS}=0V$			1.0	μA
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 100	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	$V_{GS}=10V$ $V_{DS}=20V$ $R_L=1$ $R_{GEN}=3$		11		ns
Turn-On Rise Time	t_r			11		
Turn-Off Delay Time	$t_{d(off)}$			40		
Turn-Off Fall Time	t_f			10		

/ Electrical Characteristic Curve



/ Electrical Characteristic Curve

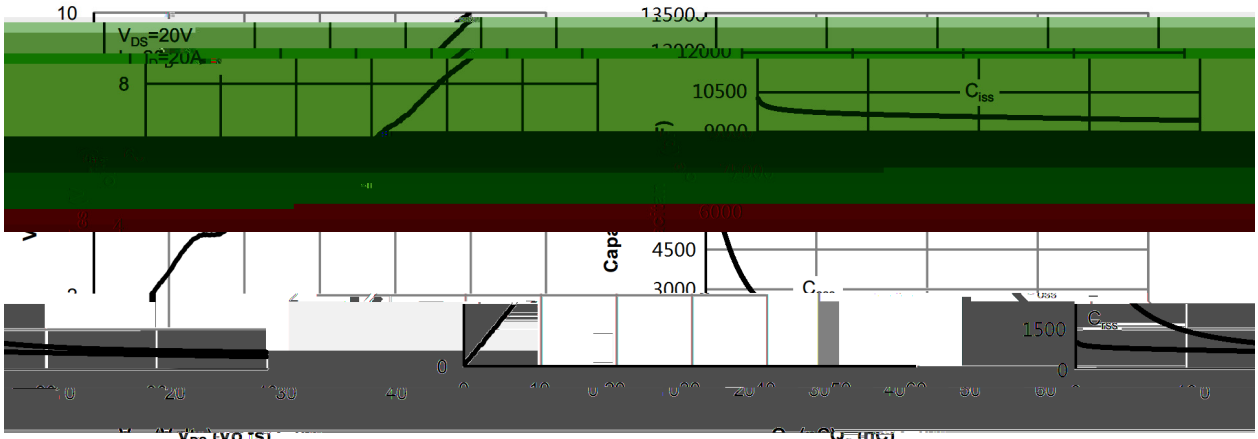


Figure 6: Capacitance Characteristics

Figure 7: Core-Capacitance Characteristics

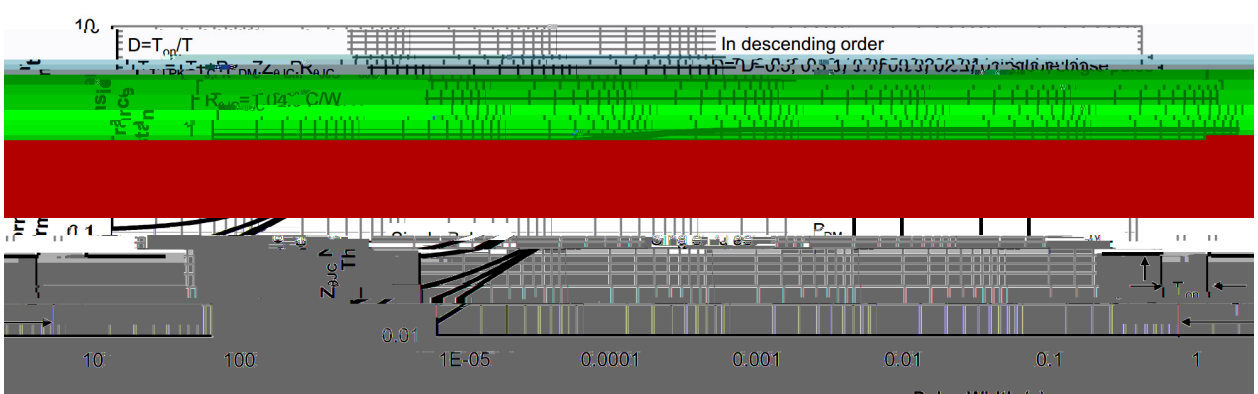
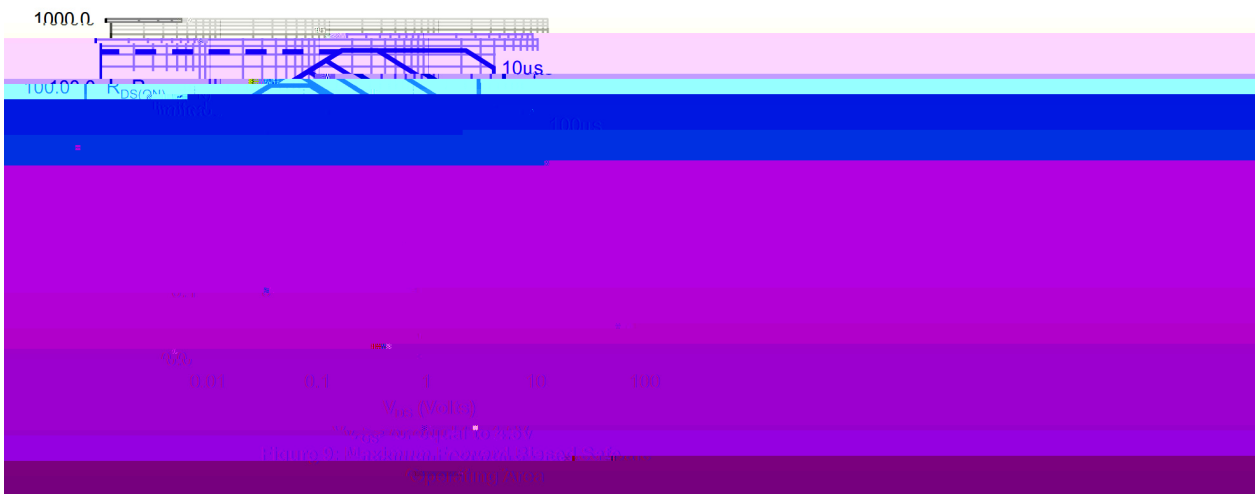
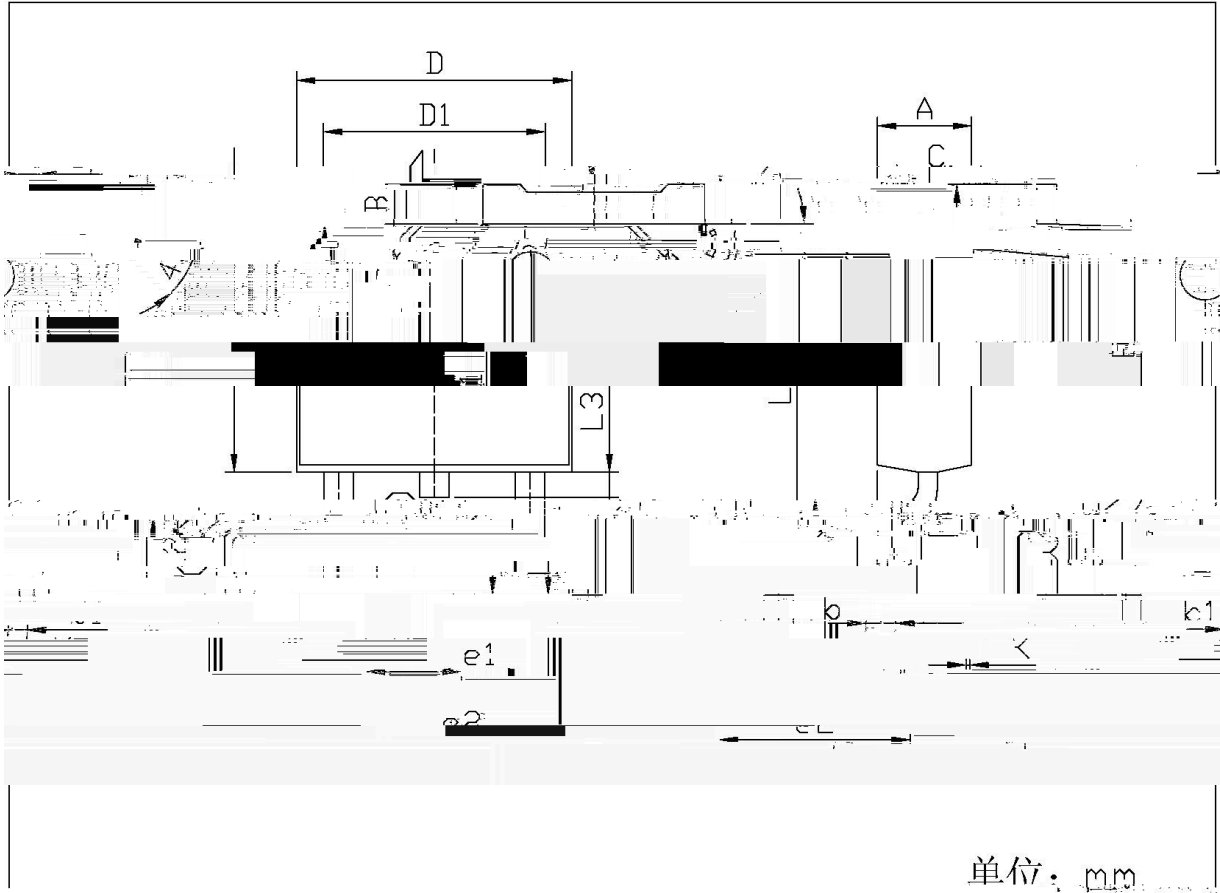


Figure 10: Allowed Maximum Junction Thermal Impedance

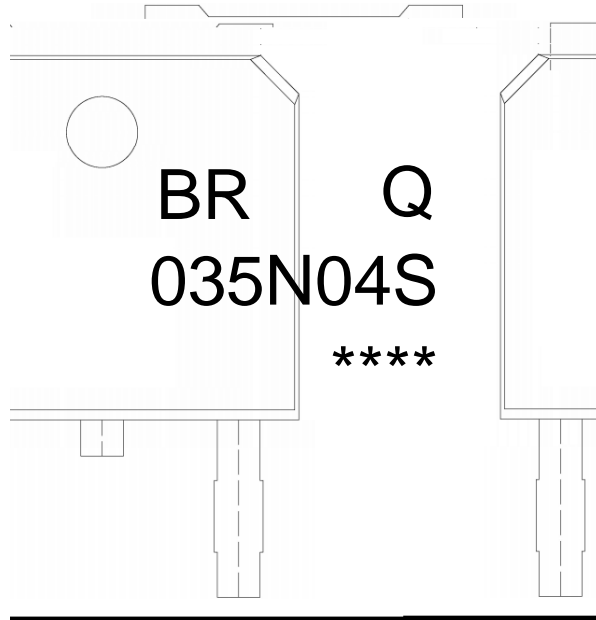
/ Package Dimensions



Dimensions		Millimeters		Dimensions		In Millimeters	
Min	Max	Symbol	Min	Max	Symbol	Min	Max
		B	0.95	1.25	e1	2.24	2.34
			0.70	0.90	e2	4.52	4.72
			0.45	0.55	L	9.95	10.35
			0.45	0.55	L3	1.59	1.65
			0.70	0.85	D1	6.45	6.75
			0.50	0.70	D	5.50	6.00

□ TO-252

/ Marking Instructions



BR

Q

035N04S

Note:

BR: Company Code

Q: Automobile halogen-free product Code

035N04S: Product Type Code

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

() / Temperature Profile for IR Reflow Soldering(Pb-Free)

Note:

- 1 150 200 60 120sec; 1.Preheating:150~200 , Time:60~120sec.
- 2 255±5 5±0.5sec; 2.Peak Temp.:255±5 , Duration:5±0.5sec.
- 3 2 10 /sec. 3. Cooling Speed: 2~10 /sec.