BRCS035N04SDPQ

Rev.A Dec.-2023

DATA SHEET

/ Descriptions

TO-252 N

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

/ Features

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

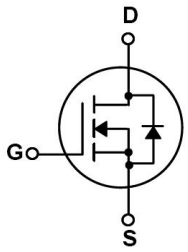
Low $R_{DS(on)}$,low gate charge, low C_{rss}, fast switching, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

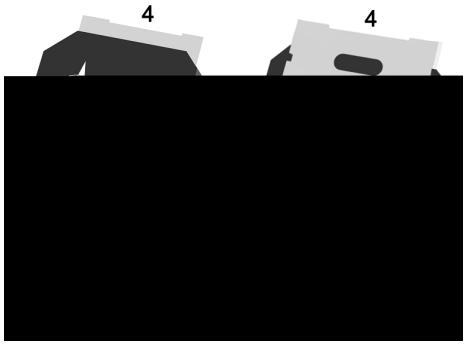
DC/DC

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



PIN1 G PIN 2 D PIN 3 S PIN 4 D

/ Marking

See Marking Instructions.

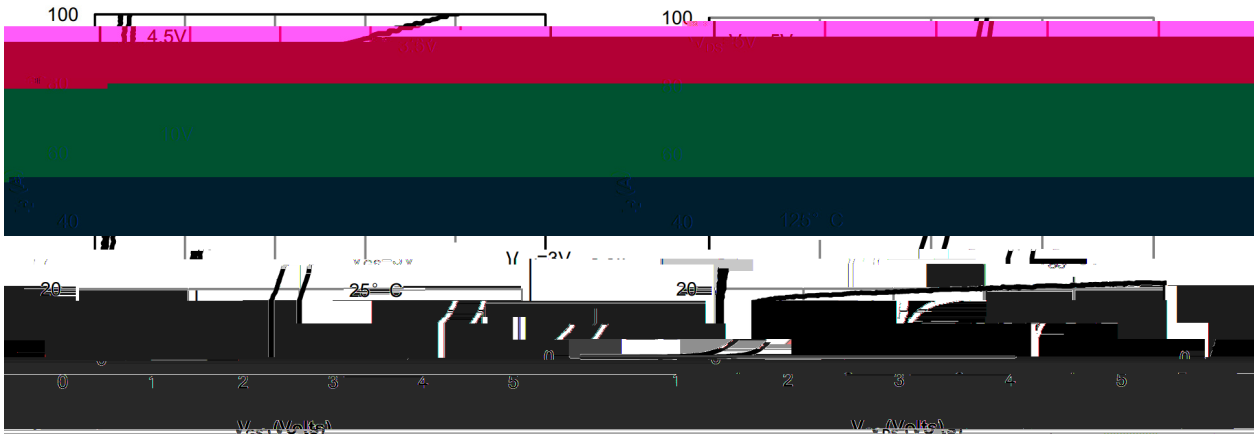
Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	40	V
Drain Current		I_D(Tc=25)	136	A
Drain Current - Pulsed		I_{DM}	280	A
Gate-Source Voltage		V_{GS}	± 20	V
Avalanche Current		I_{AS}	33	A
Single Pulsed Avalanche Energy(L=0.5mH)		E_{AS}	435	mJ
Power Dissipation		P_D(Tc=25)	118	W
Junction and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

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V	I_D=250μA	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}=±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=1Ω R_{GEN}=3Ω		11		ns
Turn-On Rise Time	t_r			11		
Turn-Off Delay Time	$t_{d(off)}$			40		
Turn-Off Fall Time	t_f			10		

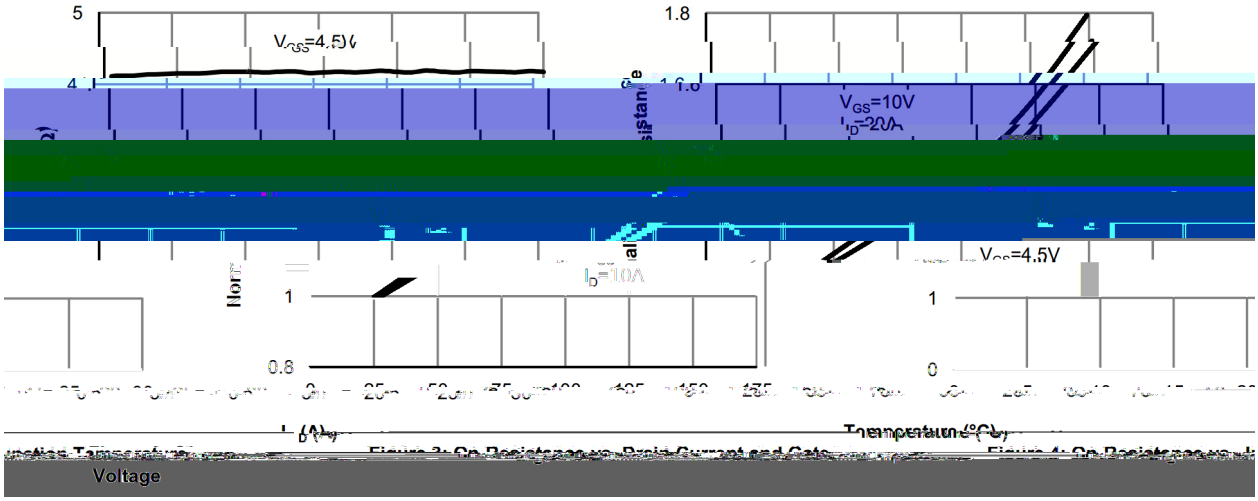
/ Electrical Characteristic Curve



Region Characteristics

Figure 2: Transfer Characteristics

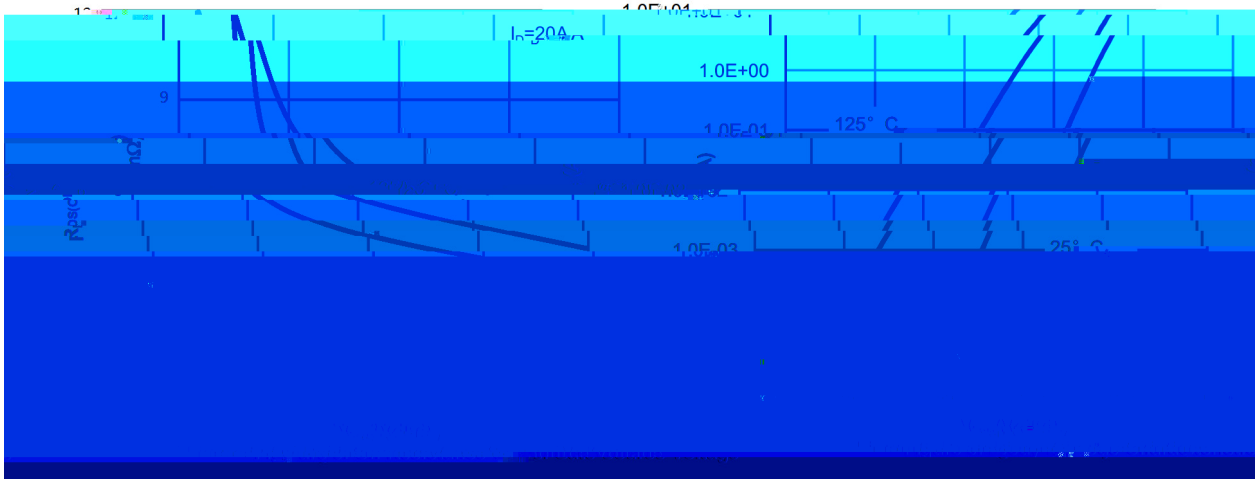
Figure 1: On-



Voltage

Figure 3: On Resistance vs. Drain Current and Gate

Figure 4: On Resistance vs.



/ Electrical Characteristic Curve

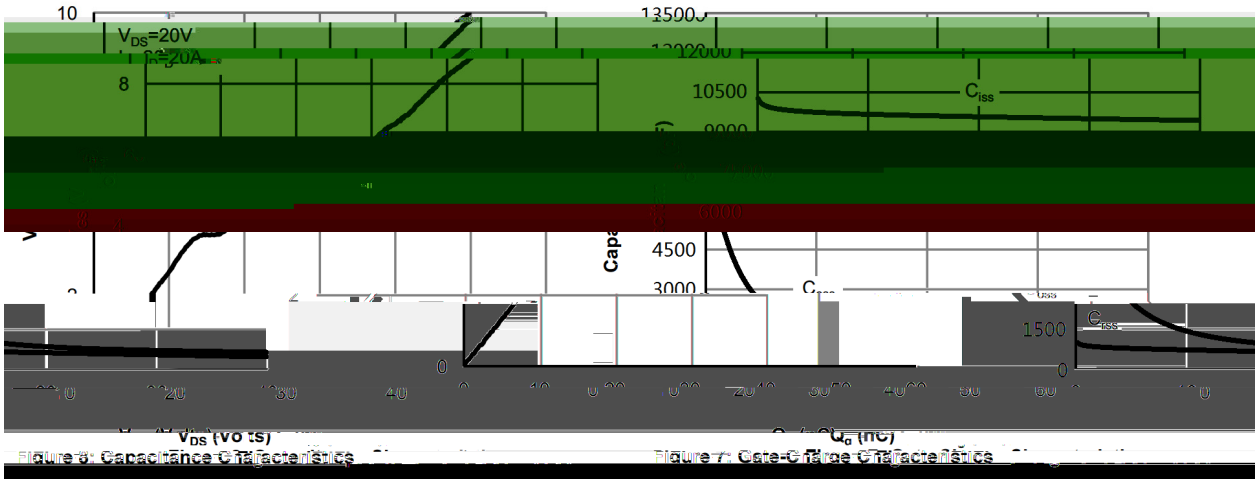


Figure 8: Capacitance Characteristics

Figure 7: Gate-Charge Characteristics

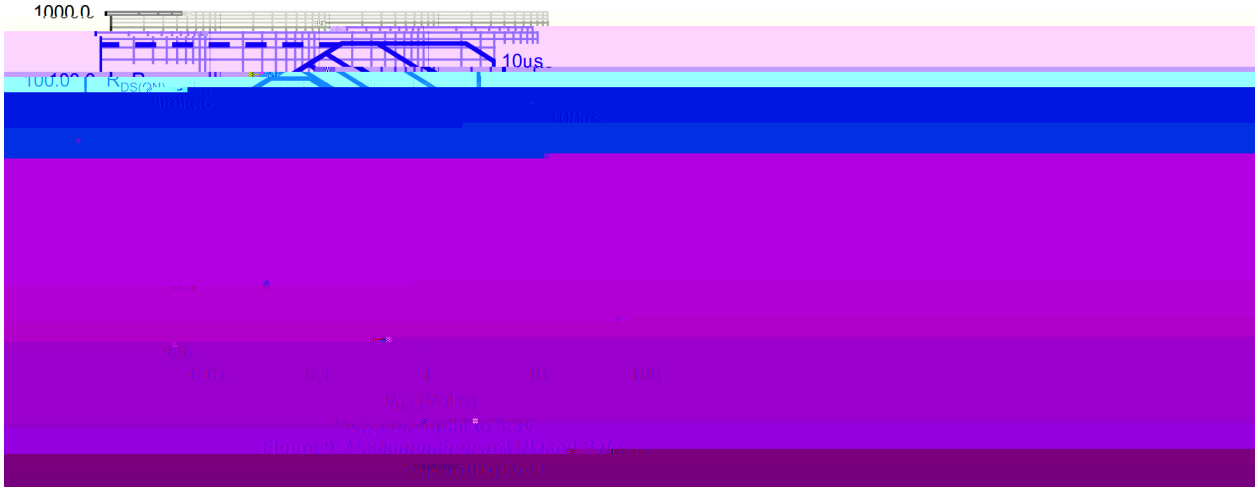


Figure 9: Maximum Forward Biased Safe Operating Area

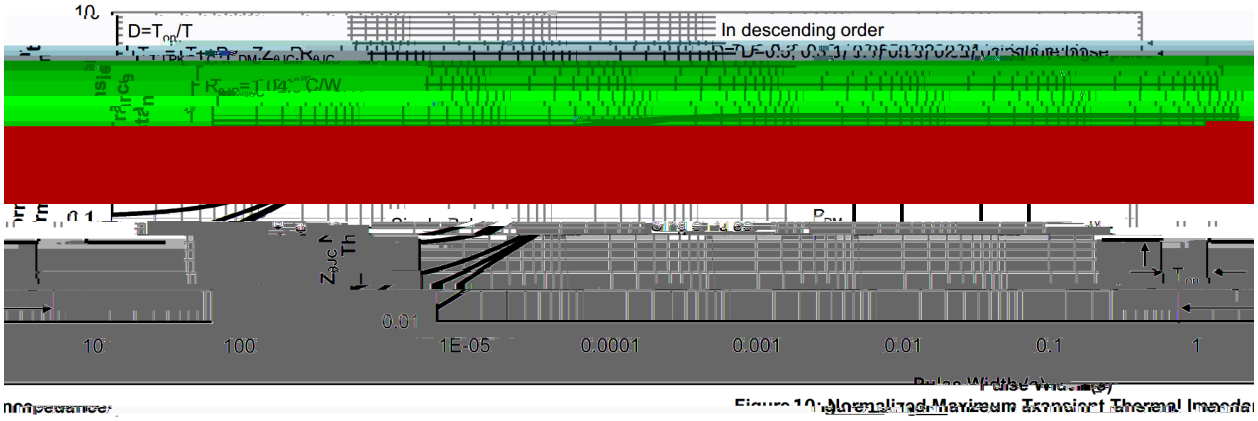
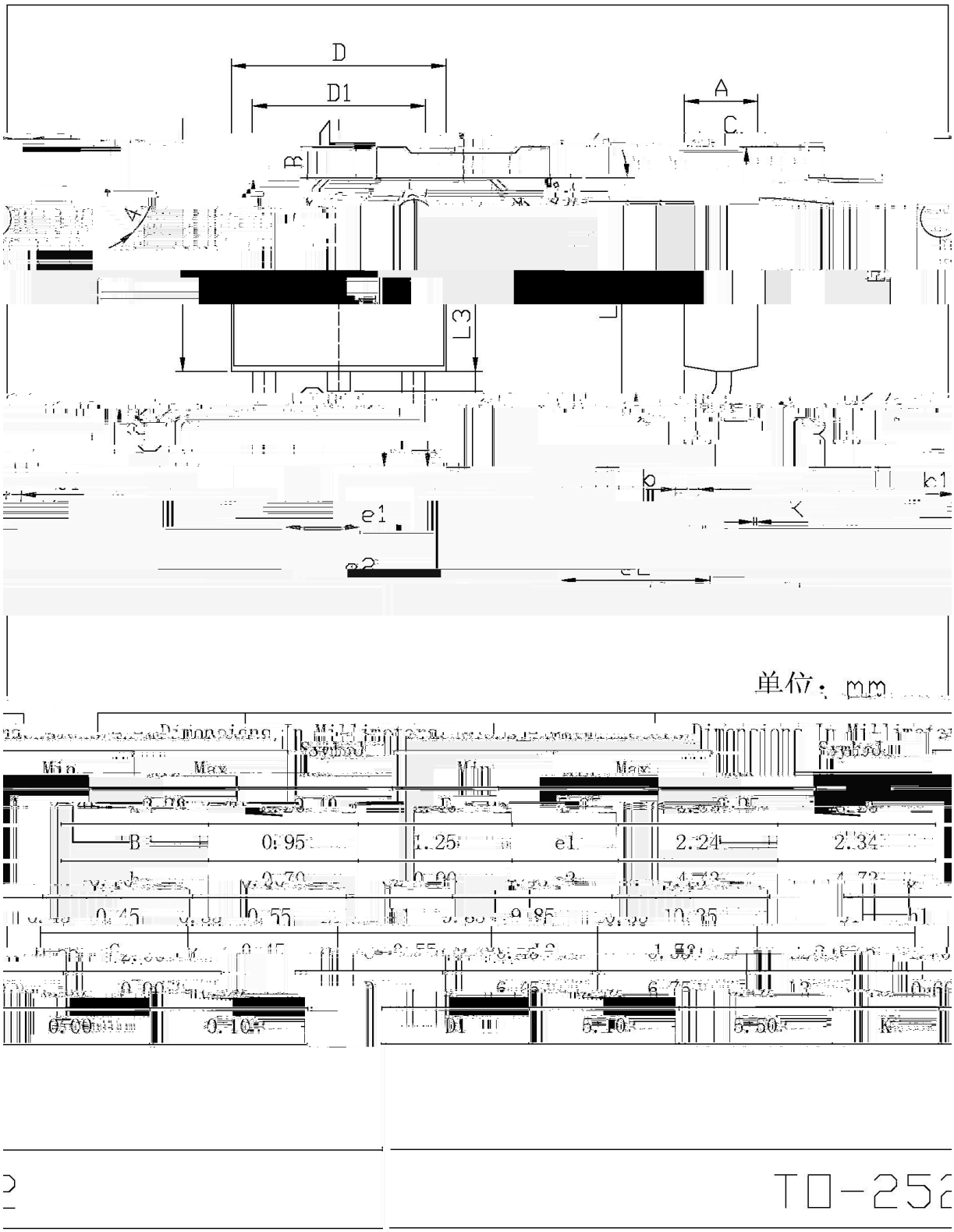
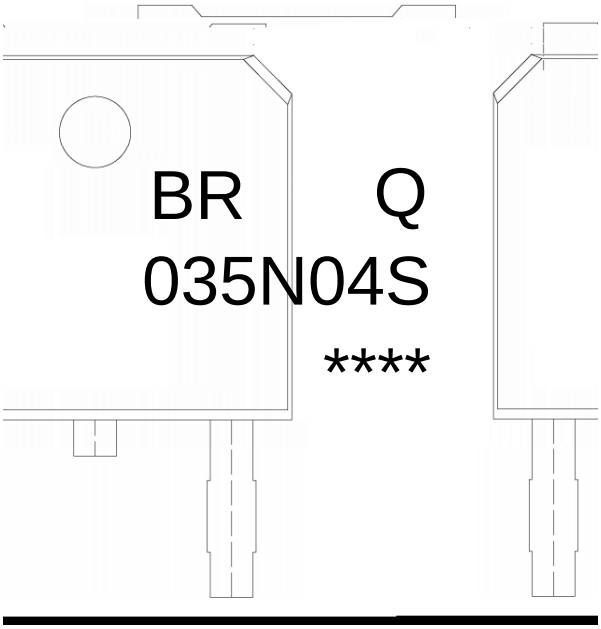


Figure 10: Normalized Maximum Transient Thermal Impedance

/ Package Dimensions



/ Marking Instructions



BR

Q

035N04S

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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.