/ Descriptions

TO-252 N

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

/ Features

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

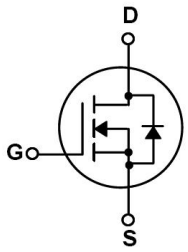
Low $R_{DS(on)}$,low gate charge, low C_{rss}, fast switching, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

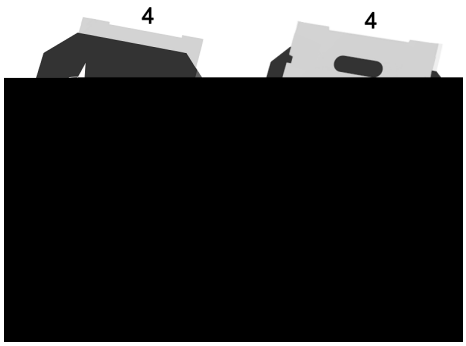
DC/DC

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)	150	A
Drain Current - Pulsed		I_{DM}	304	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)	120	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	$R_{\theta JC}$	1.04	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250εA	40			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=40V V_{GS}=0V			1.0	εA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250εA	1.0	1.7	2.5	V

Static Drain-Source
On-Resist DS31 Tw.49(on4958 0 0 10.5 256.92 308.3 Tm0-.0016 Tcj-1.8865 -.00 18.90c810(72 0 0 7.02 282.72 308.1

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit

Tu.0037 Twp4 3ditions

/ Electrical Characteristic Curve

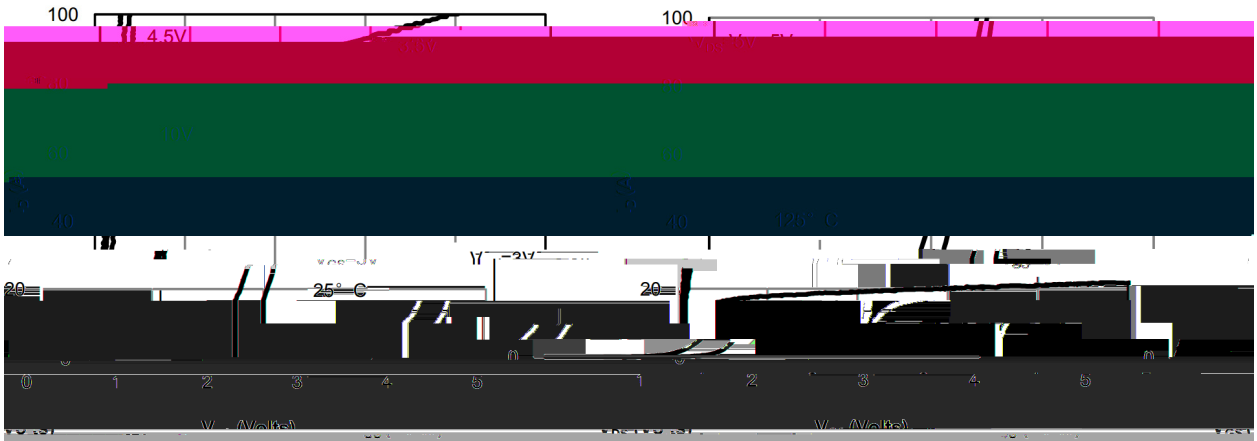
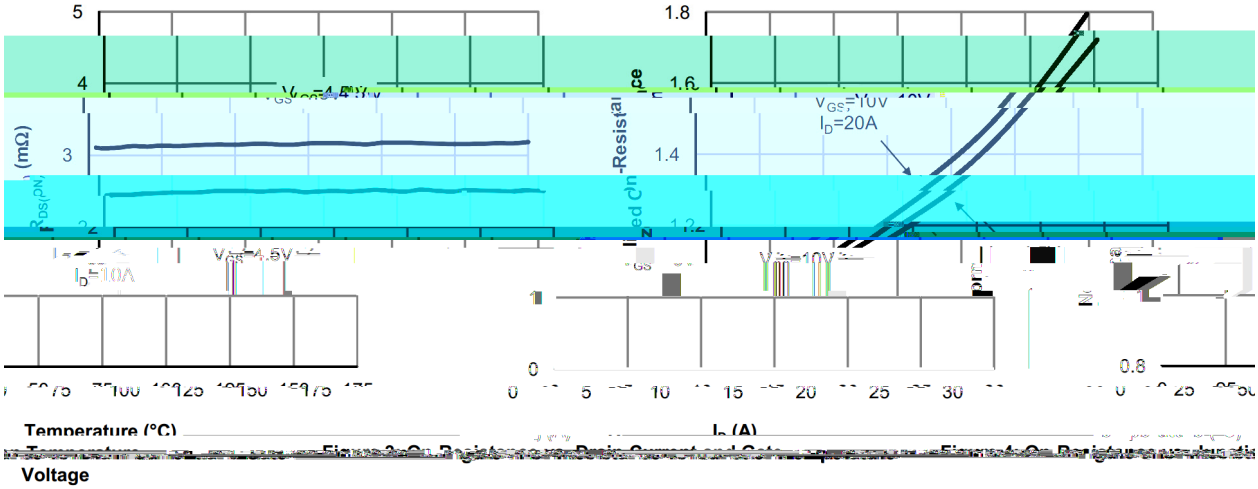
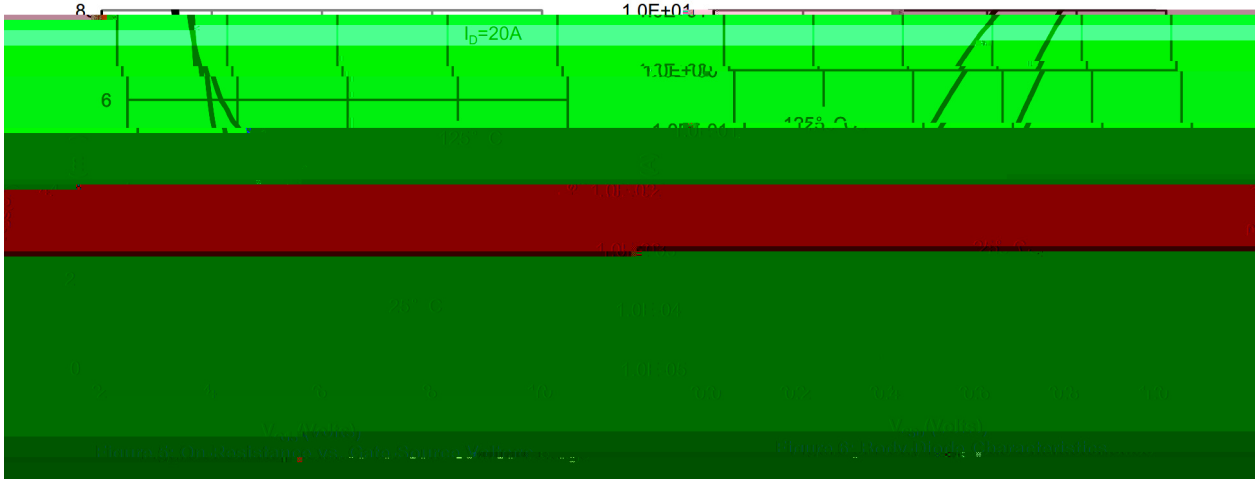


Figure 2: Transfer Characteristics

Figure 1: On-Region Characteristics



Voltage



/ Electrical Characteristic Curve

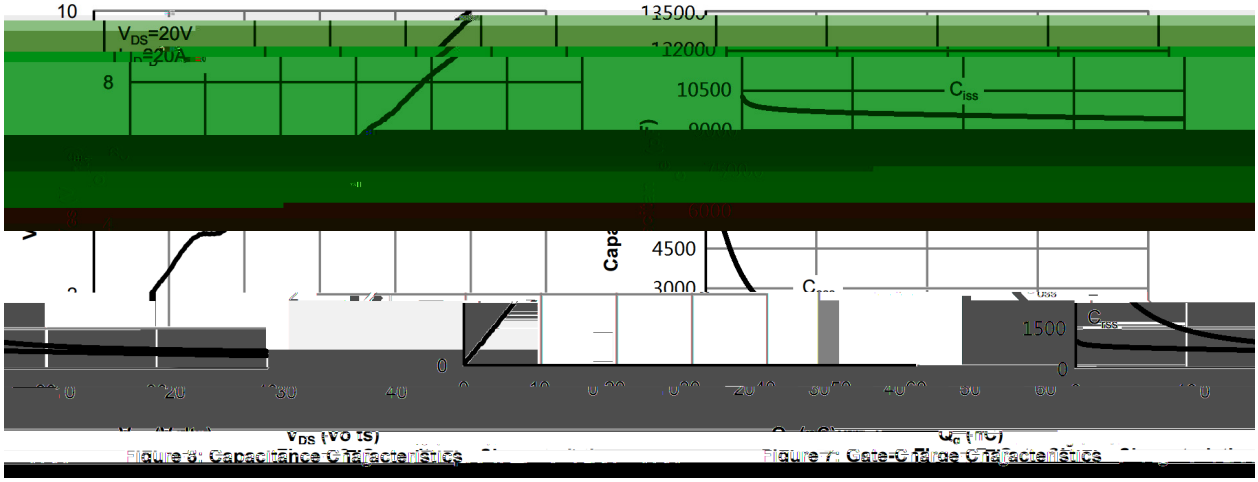
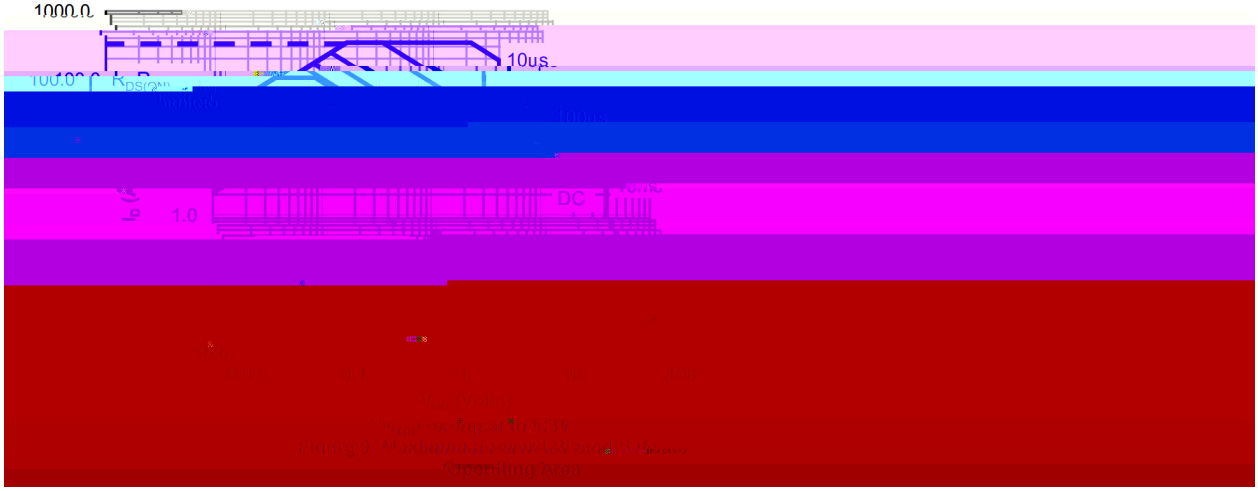


Figure 6. Capacitance Characteristics

Figure 7. Gate-Charge Characteristics



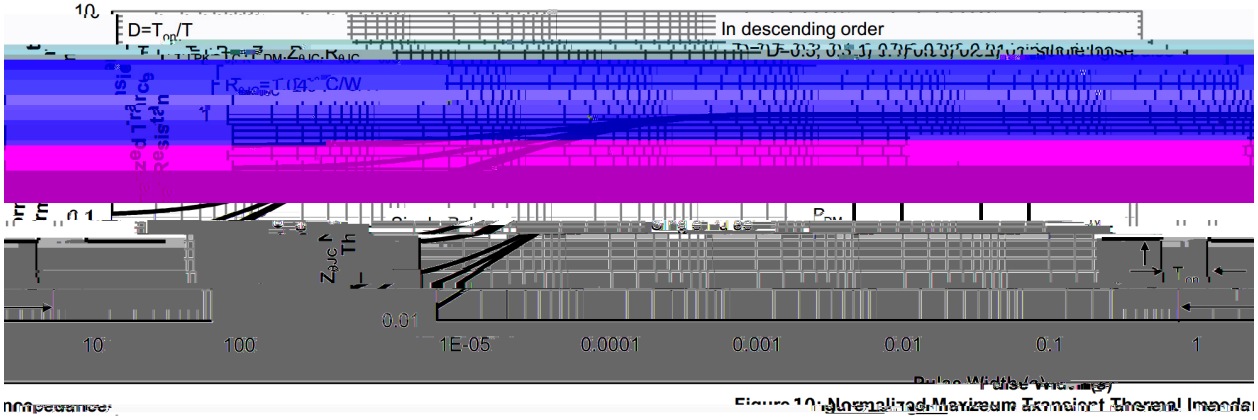
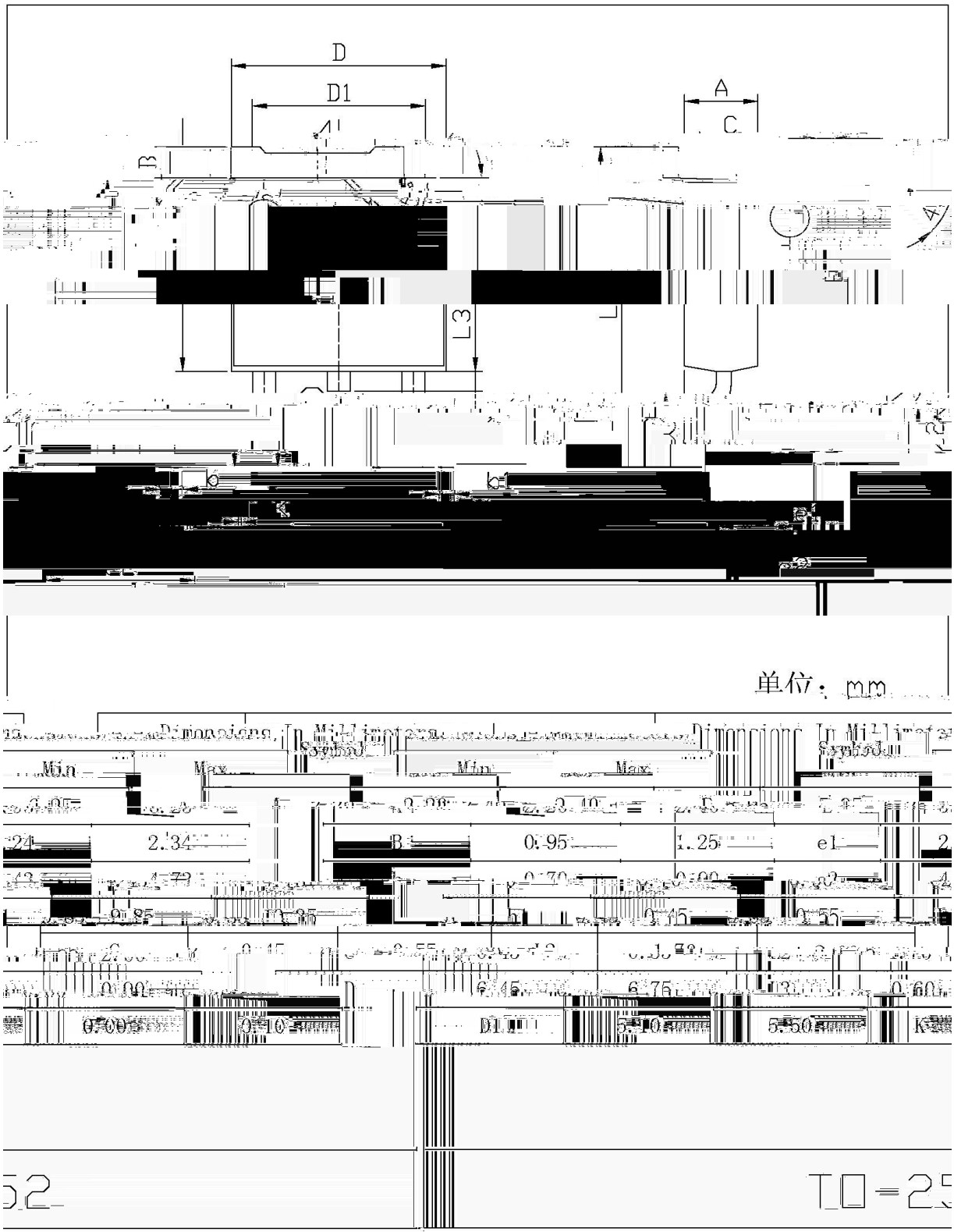
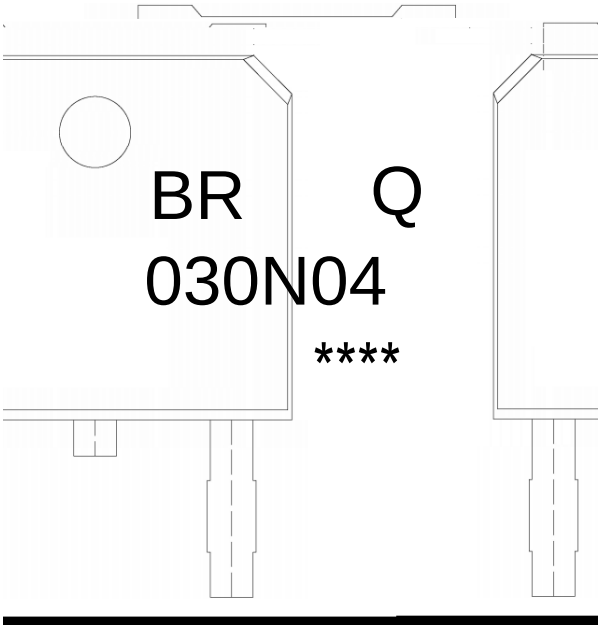


Figure 10. Normalized Maximum Transient Thermal Impedance

/ Package Dimensions



/ Marking Instructions



BR

Q

030N04

****

Note:

BR:	Company Code
Q:	Automobile halogen-free product Code
030N04:	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.

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ REEL