

BRCS150P04DPQ

Rev.A Mar.-2023

5 é / Descriptions

TO-252 .> // x 6 ?ú 3 « | • 'ož

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

α a / Features

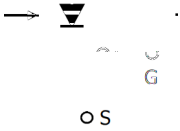
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Low $R_{DS(on)}$, low gate charge, low C_{rSS} , fast switching, Trench Technologies, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

Đ ÷ / Applications

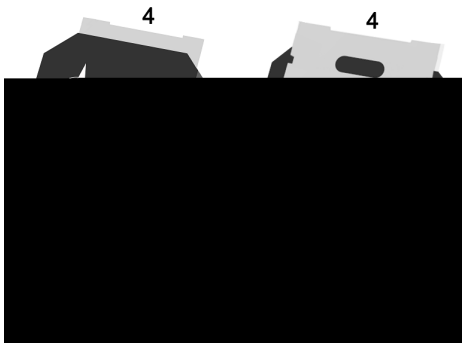
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Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products, Meet the stringent requirements of automotive applications.

Ã W] Ô . / Equivalent Circuit

_____ o D _____



• Ů - æ / Pinning



PIN1 y G

PIN 2 y D

PIN 3 y S

PIN 4 y D

, M V / Marking

• - ~ a øž See Marking Instructions.

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Absolute Maximum Ratings(Ta=25 ;)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V _{DSS}	-40	V
Drain Current	I _D (Tc=25)	-40	A
Drain Current - Pulsed	I _{DM}	-115	A
Gate-Source Voltage	V _{GS}	±20	V
Avalanche Current	I _{AS}	24.5	A
Single Pulsed Avalanche Energy ΔL=0.5mH Δ	E _{AS}	210	mJ
Power Dissipation	P _D (Tc=25)	52	W
Storage Temperature Range	T _{stg}	-55 150	
Thermal Resistance-Junction to Ambient	t 0 10s	R _{θJA}	/W
	Steady-State		
Thermal Resistance-Junction to Case	Steady-State	R _{θJC}	2.4

Electrical Characteristics(Ta=25 ;)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =-250 A	-40			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-40V V _{GS} =0V			1.0	A
Gate-Body Leakage Current Forward	I _{GSS}	V _{GS} =±20V V _{DS} =0V			±0.1	A
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250 A	-1.0	-1.7	-2.5	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V I _D =-20A		13	15	m
		V _{GS} =-4.5V I _D =-10A		17	30	
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		6.5		
Input Capacitance	C _{iss}	V _{DS} =-25V V _{GS} =0V f=1.0MHz		2680		pF
Output Capacitance	C _{oss}			1150		
Reverse Transfer Capacitance	C _{rss}			870		
Total Gate Charge	Q _g (10V)	V _{GS} =-10V V _{DS} =-20V I _D =-20A		42		nC
Total Gate Charge	Q _g (4.5V)			18.6		
Gate Source Charge	Q _{gs}			7		
Gate Drain Charge	Q _{gd}			8.6		

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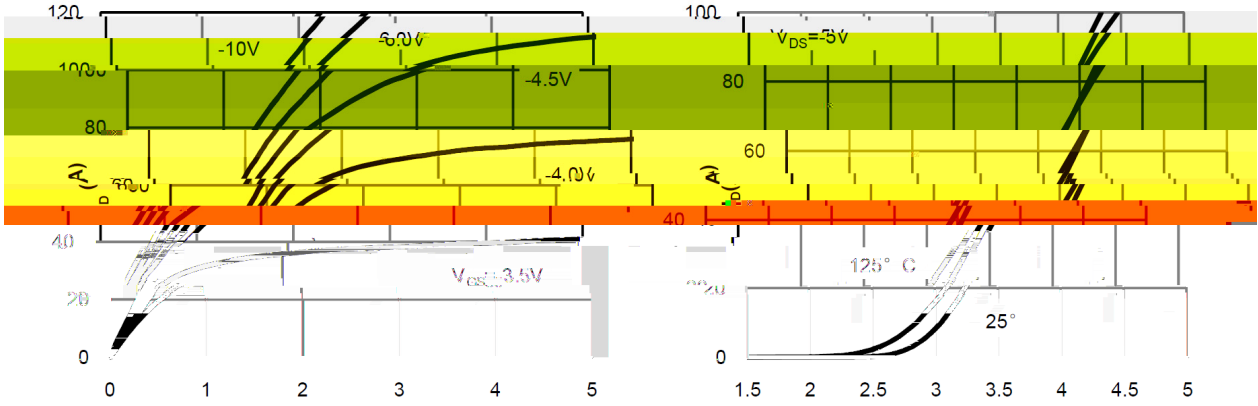


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Electrical Characteristics(Ta=25 ;)

@ f Parameter	... Z Symbol	y i Ú ^ Test Conditions	Â 4 › Min	Á ° › Typ	Â Ý › Max	% y Unit
Turn-On Delay Time	t _{d(on)}	V _{GS} =-10V V _{DS} =-20V R _L =1 i R _{GEN} =3		9.4		ns
Turn-On Rise Time	t _r			20		
Turn-Off Delay Time	t _{d(off)}			55		
Turn-Off Fall Time	t _f			30		

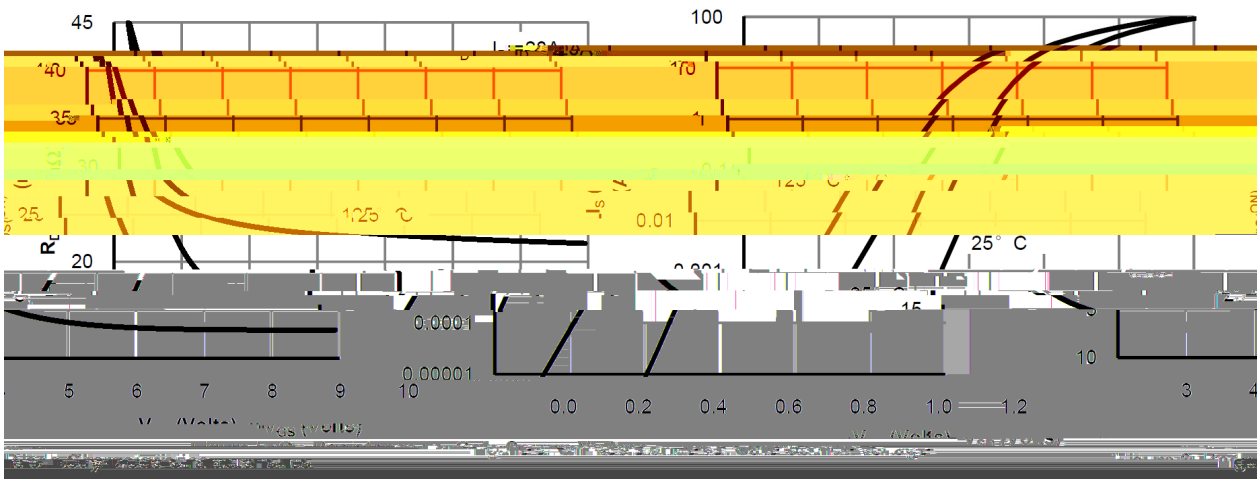
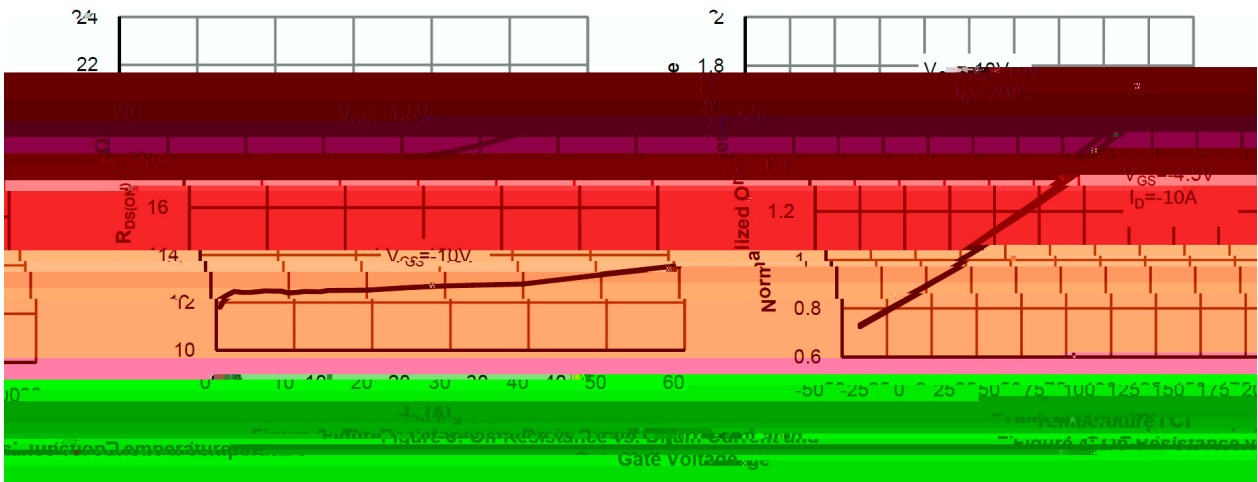
Electrical Characteristic Curve



Transfer Characteristics

Figure 1: On-Region Characteristics

Figure 2: Tr



Electrical Characteristic Curve

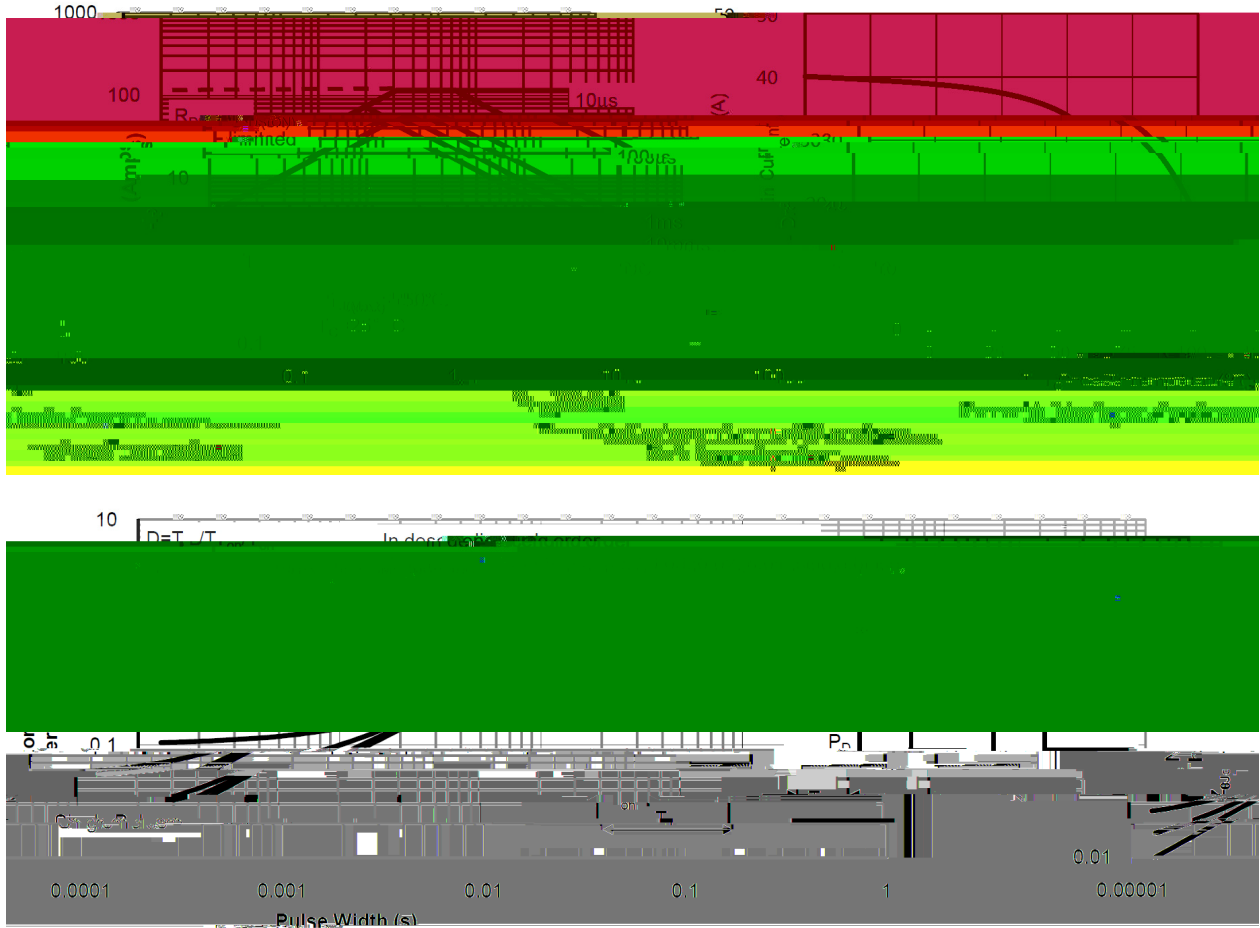
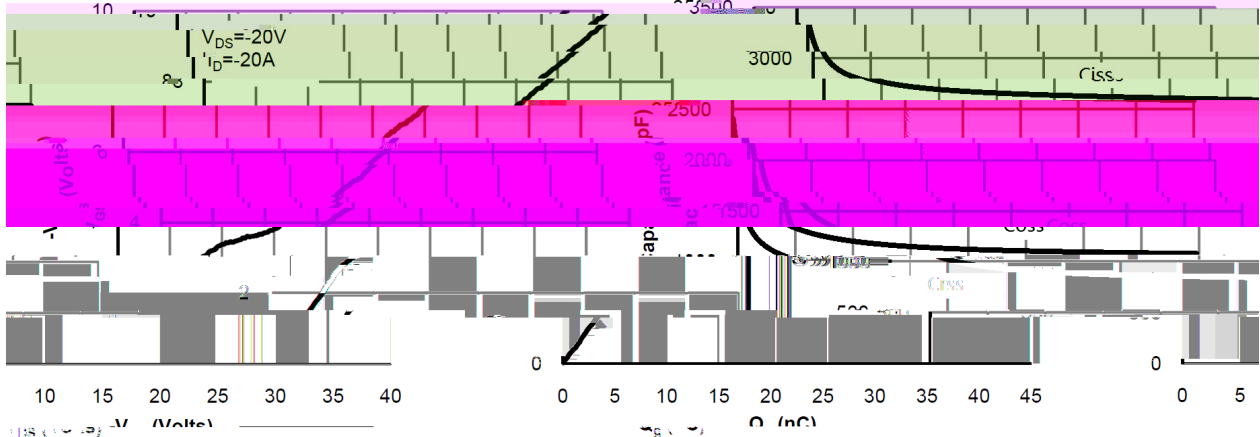
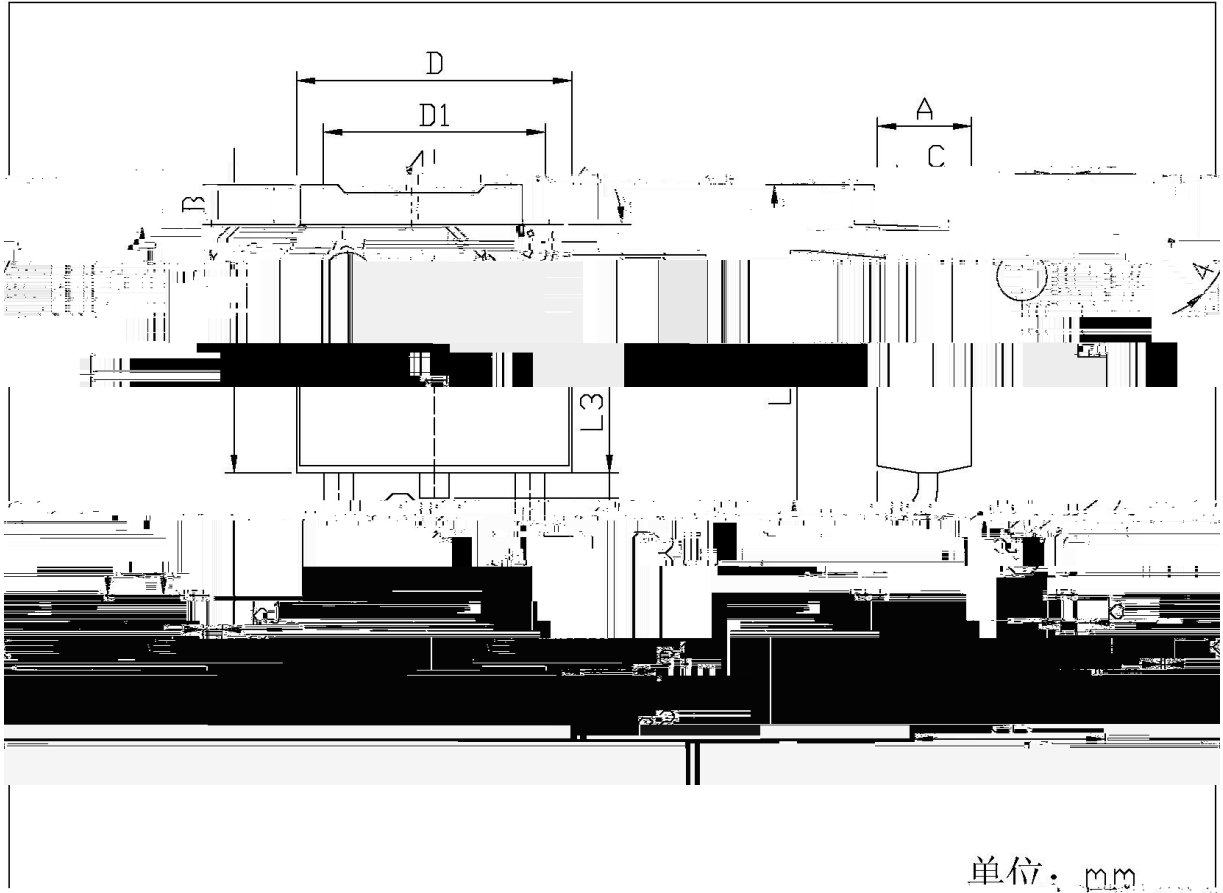


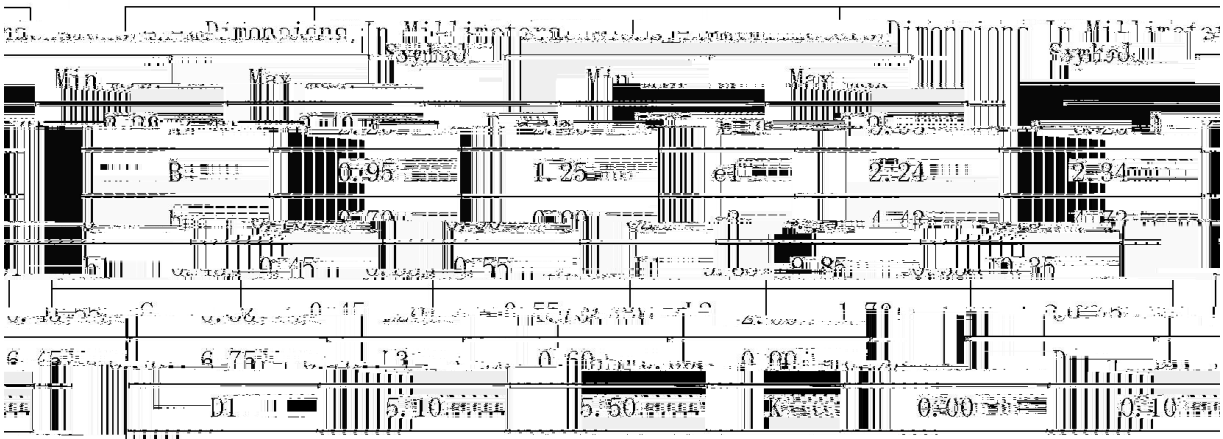
Figure 9: Dynamic Characteristics

Figure 10

∅ ≡) ϕ / Package Dimensions

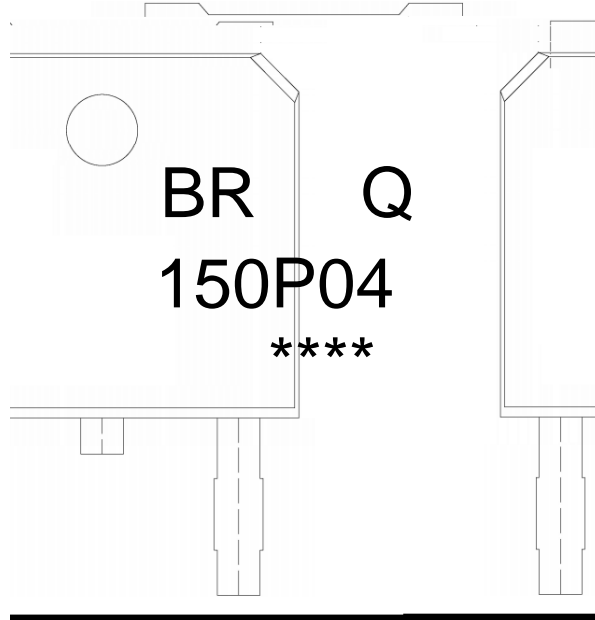


单位: mm



TO-252

Marking Instructions



- BR y [W A
 - Q y V ñ —)í D } ö œ
 - 150P04 y ° Z W A
 - y ÿ D Z W A k š ÿ D Z J
- Note:
- BR: Company Code
 - Q: Automobile halogen-free product Code
 - 150P04: Product Type Code.
 - ****: Lot No. Code, code change with Lot No

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