

BRD50P06Q
Rev.A Sep.-2024

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

Low $R_{DS(on)}$, low gate charge, low C_{rss}

@ f Parameter	... Z Symbol	f › Rating	% y Unit
Drain-Source Voltage	V _{DS}	-60	V
Drain Current	I _D (T _C =25)	-50	A
Drain Current - Pulsed	I _{DM}	-200	A
Gate-Source Voltage	V _{GS}	±20	V
Power Dissipation	P _D (T _C =25)	85	W
Single Pulsed Avalanche Energy	E _{AS}	250	mJ
Avalanche Current(L=0.5mH)	I _{AS}	25	A
Junction and Storage Temperature Range	T _j , T _{stg}	-55 to 150	-
Thermal resistance, junction - ambient	t 0 10s	R _{θJA}	/ W
	Steady-State		
Thermal resistance, junction - case	Steady-State	R _{θJC}	1.5

@ f Parameter	... Z Symbol	y i Ú ^ Test Conditions	Â 4 › Min	Á ° › Typ	Â Ý › Max	% y Unit
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V I _D =-250 A	-60	-68		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-60V V _{GS} =0V			-1.0	A
		V _{DS} =-48V T _C =150			-10	
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	5.5	6.8	7.5	V

BRD50P06Q
Rev.A Sep.-2024

Electrical Characteristic Curve

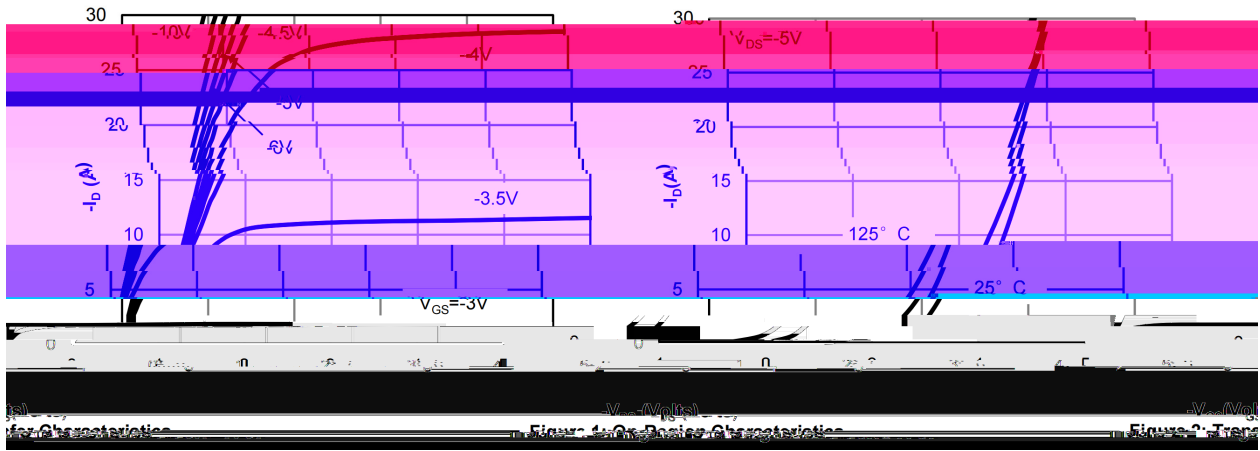


Figure 1: Drain Current vs. Gate-Source Voltage Characteristics

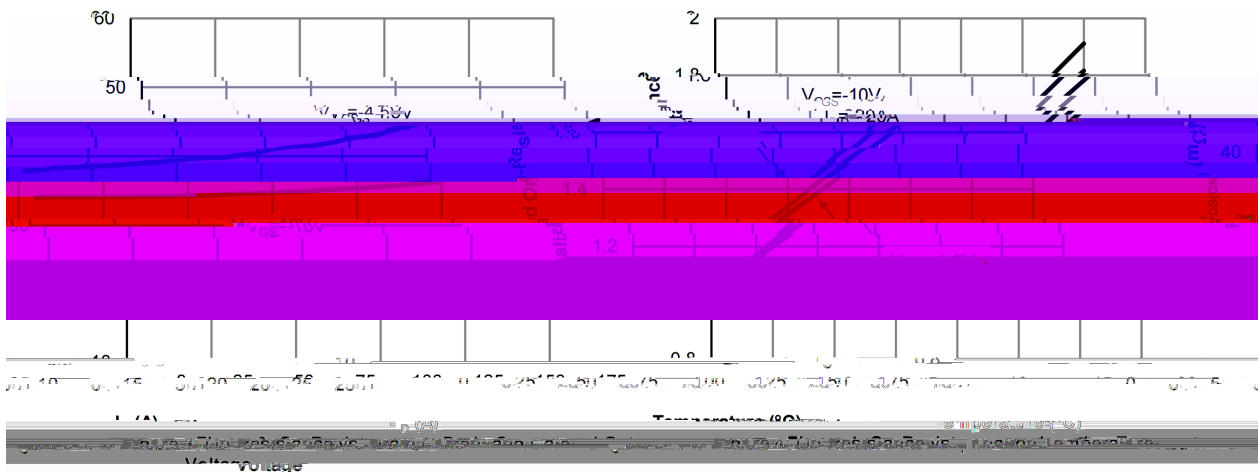
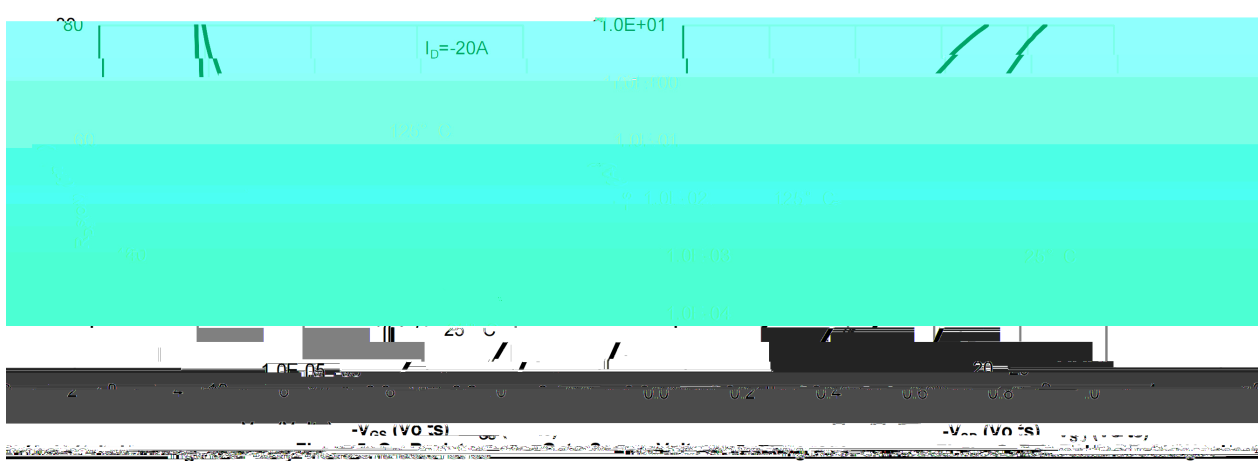


Figure 2: Transconductance vs. Gate-Source Voltage Characteristics



Electrical Characteristic Curve

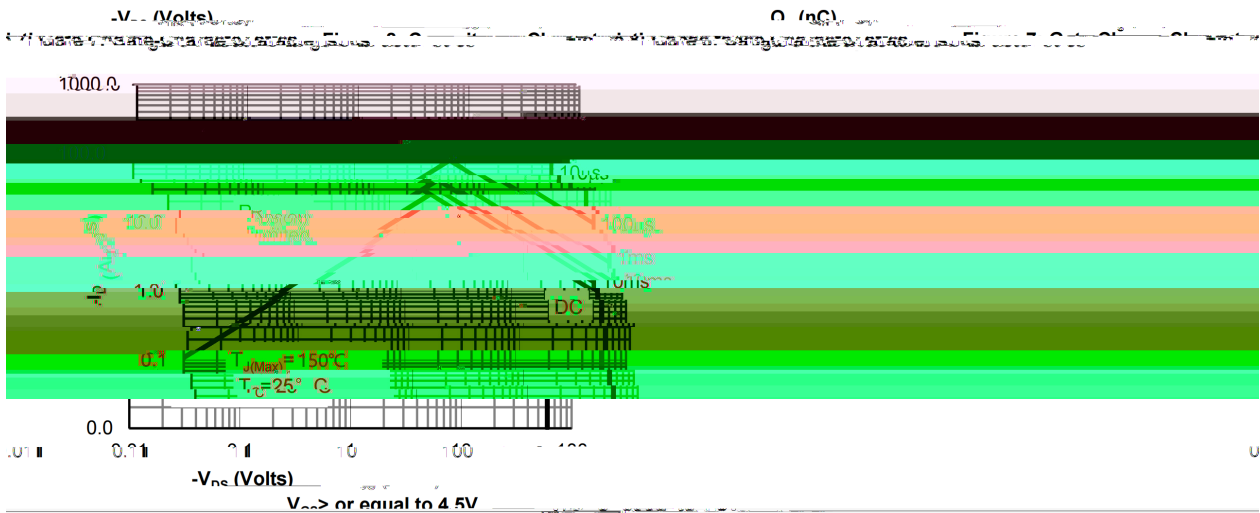
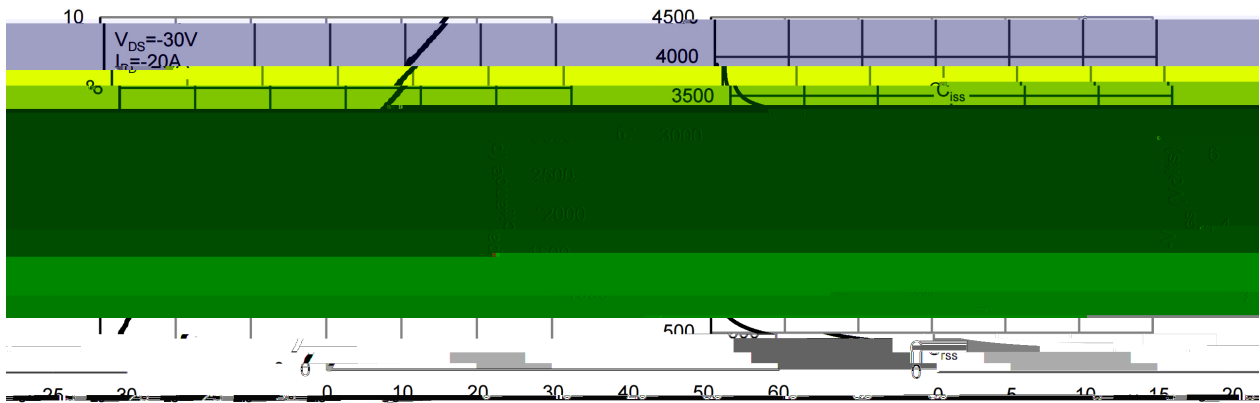


Figure 9. Maximum Forward Biased Safe Operating Area

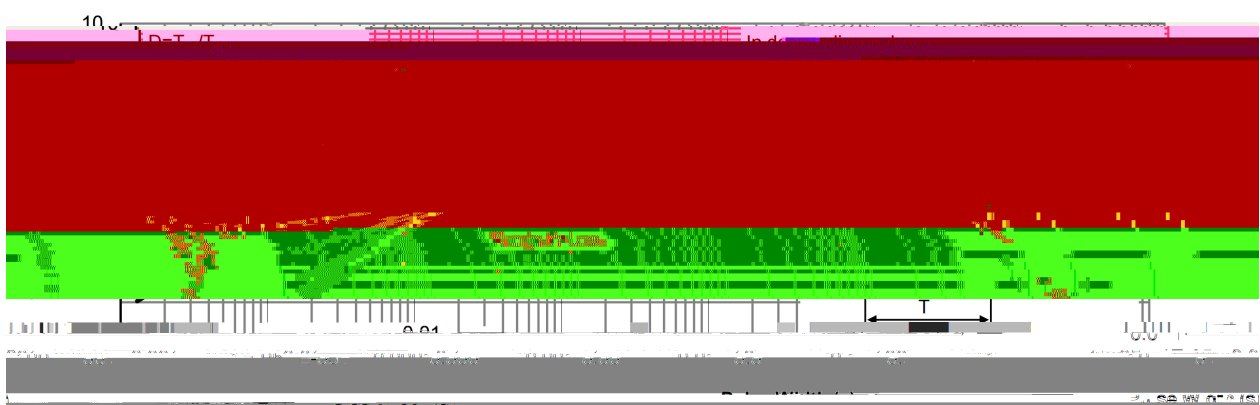
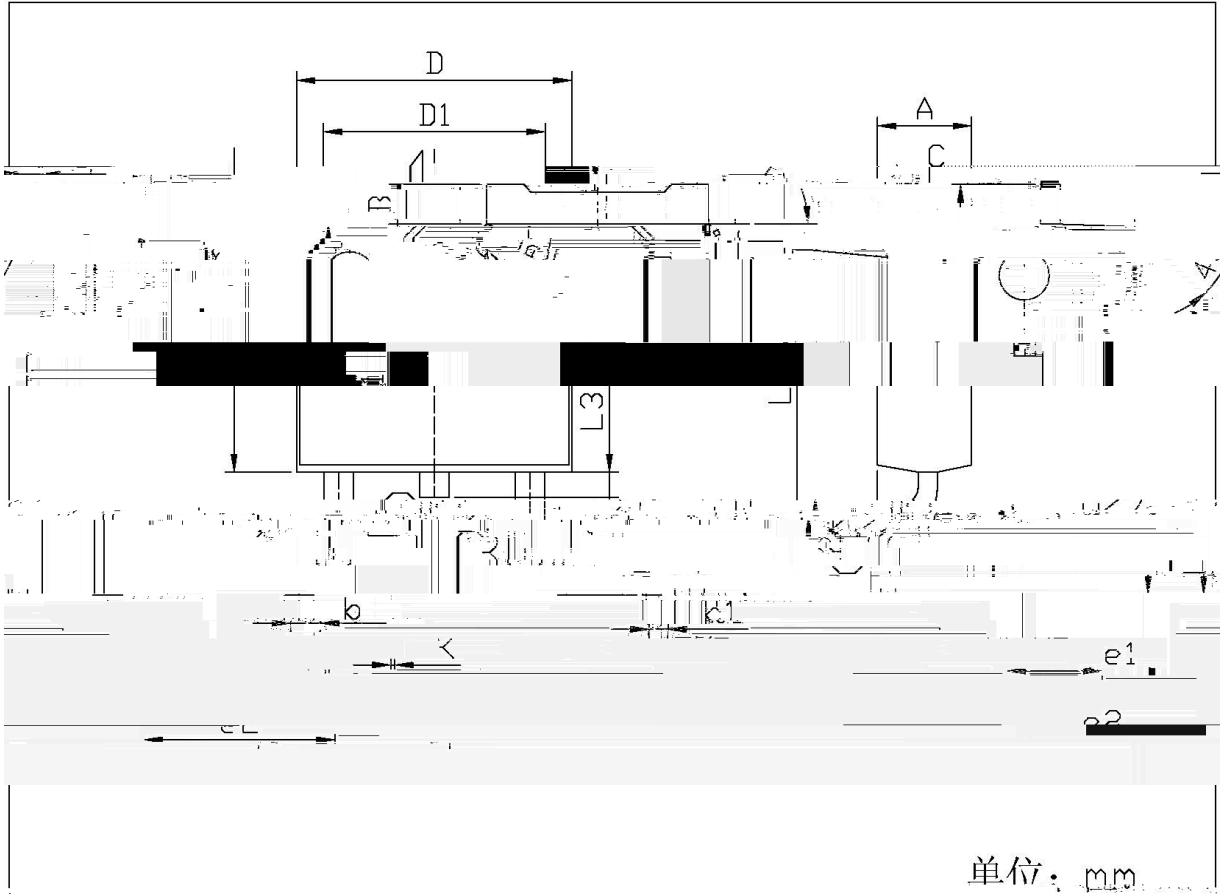


Figure 10. Maximum Forward Biased Safe Operating Area

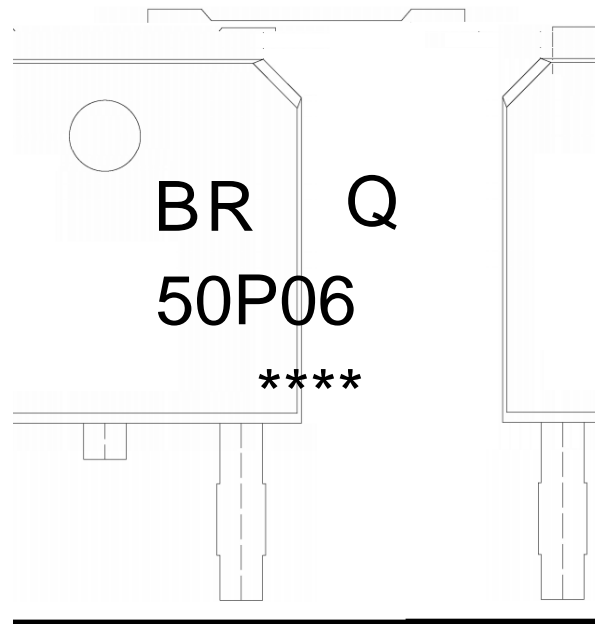
∅ □ =) ∅ / Package Dimensions



Dimensions		Millimeters		Dimensions		In Millimeters	
Min	Max	Symbol	Min	Max	Symbol	Min	Max
2.24	2.34	B	0.95	1.25	e1		
3.2	4.73		0.70	0.90	e2		
11.18	9.85	L	10.35	0.45	0.55		
6.45	6.76	L3	1.2	0.60	0.0		
0.10	0.10	D1	5.10	5.50	K	0.70	

TO-252

, M y f / Marking Instructions



^a ç y
 BR y , [W A
 Q y V ñ —)í D } ö œ
 6 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
- 50P06: Product Type Code
- ****: Lot No. Code, code change with Lot No

šWD t...•Žç (x/) / :KSVKXGZ[XK 6XULORK LUX /8 8KLRU] 9URJKXOTM 6

a ç y

Note:

- 1. Preheating: 150~200 - , Time: 60~120sec;
- 2. Peak Temp.: 255 r5 - , Duration: 5 r0.5sec;
- 3. Cooling Speed: 2~10 - /sec.

ÂD /Cã p ~ »] / Resistance to Soldering Heat Test Conditions

"† y 260 r5 - ž • y 10 r1 sec. Temp.: 260±5 Time: 10±1 sec

G P á / Packaging SPEC.

2 & x / REEL

Package Type	Units ;>û !H					Dimension ;>û p . (unit /mm³)#q H ñôV#q ...™(•f#q	
	Units/Reel /--	Reels/Inner Box -- /-	Units/Inner Box / -	Inner Boxes/Outer Box - /1ç	Units/Outer Box /1ç	Reel	Dimension /Outer Box
TO-252	2,e/- %,	žógh5ÖÖP žò	cj' YYè•>Ub€")... a™6a@s 2i1 \$) ñU• Ö@ ñ4 @ @ # @ 5ñ4 d â†HE,,				