

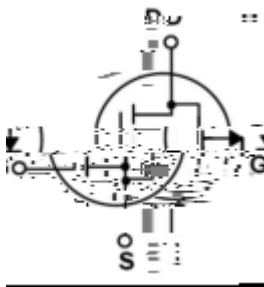
TO-252 .> // x 6 ?ú 3 MOS « | • 'ož 6 -CHANNEL MOSFET in a TO-252 Plastic Package.

8*9 u 4 k y > z k) x y 4 k • ¼ , † ½ ož

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

*ü b " _+ CÃ V Ö"QE:+ CÃ Ã DC/DC E@ 6 Ä " ã { •,X+ \$dP→ E@ 6 Ä

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



PIN1 y G

PIN 2 y D

PIN 3 y S

PIN 4 y D

Z Ü B , M V / h_{FE} Classifications & Marking

• - ~ ^a ¢ož



@ f Parameter	... Z Symbol	f > Rating	% y Unit
Drain-Source Voltage	V_{DSS}	-100	V
Drain Current	$I_D(T_c=25^\circ\text{C})$	-30	A
Drain Current	$I_D(T_c=100^\circ\text{C})$	-21.5	A
Drain Current - Pulsed ^C	I_{DM}	-80	A
Gate-Source Voltage	V_{GS}	± 20	V
Avalanche Current ^C	I_{AS}	-27.0	A
Avalanche energy $L=0.5\text{mH}$ ^C	E_{AS}	291.6	mJ
Power Dissipation ^B	$P_D(T_c=25^\circ\text{C})$	53.5	W
	$P_D(T_c=100^\circ\text{C})$	26.5	W
Power Dissipation ^A	$P_{DSM}(T_A=25^\circ\text{C})$	2.5	W
	$P_{DSM}(T_A=70^\circ\text{C})$	1.6	W
Junction and Storage Temperature Range	$T_j \in T_{stg}$	-55 150	

@ 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}	$V_{GS}=0V$ $I_D=-250\text{ A}$	-100			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-100V$ $V_{GS}=0V$			-1.0	A
		$V_{DS}=-100V$ $V_{GS}=0V$ $T_j=55^\circ\text{C}$			-5.0	A
Gate-Body Leakage Current Forward	I_{GSS}	$V_{GS}=\pm 20V$ $V_{DS}=0V$			± 0.1	A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=250\text{ A}$	-1	-1.7	-3	V

Static Drain-Source
On-Resistance

$R_{DS(on)1}$ V_{DS}

@ f Parameter	... Z Symbol	y i Ú ^ Test Conditions	Â 4 > Min	Á ° > Typ	Â Ý > Max	% y Unit
Input Capacitance	C _{iss}	V _{DS} =-25V V _{GS} =0V f=1.0MHz		5110		pF
Output Capacitance	C _{oss}			198		
Reverse Transfer Capacitance	C _{rss}			131		
Gate resistance	R _g	V _{GS} =0V V _{DS} =0V f=1MHz		3.87		
Total Gate Charge	Q _g (10V)	V _{GS} =-10V V _{DS} =-50V I _D =-20A		16.5	25	nC
Total Gate Charge	Q _g (4.5V)			7	12	
Gate Source Charge	Q _{gs}			4.5		
Gate Drain Charge	Q _{gd}			2.5		
Turn-On Delay Time	t _{d(on)}	V _{GS} =-10V V _{DS} =-50V R _L =2.5 R _{GEN} =23		7		ns
Turn-On Rise Time	t _r			8		
Turn-Off Delay Time	t _{d(off)}			20		
Turn-Off Fall Time	t _f			3		
Body Diode Reverse Recovery Time	t _{rr}	I _F =-20A dI/dt=500A/ms		30		ns
Body Diode Reverse Recovery Charge	Q _{rr}	I _F =-20A dI/dt=500A/ms		145		nC

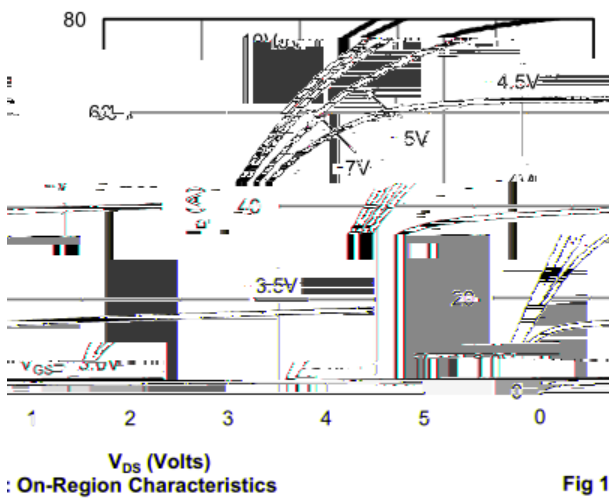
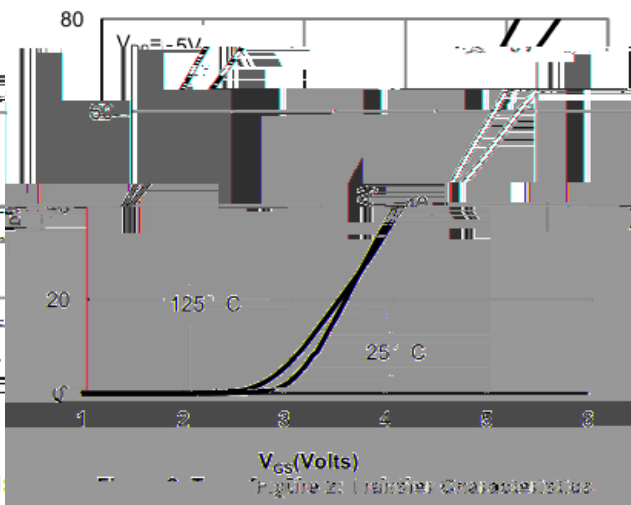
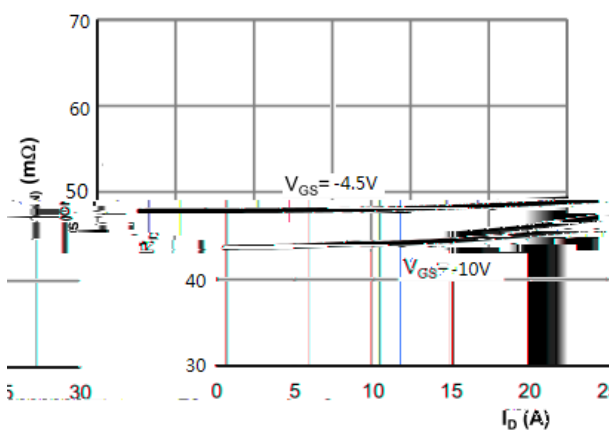
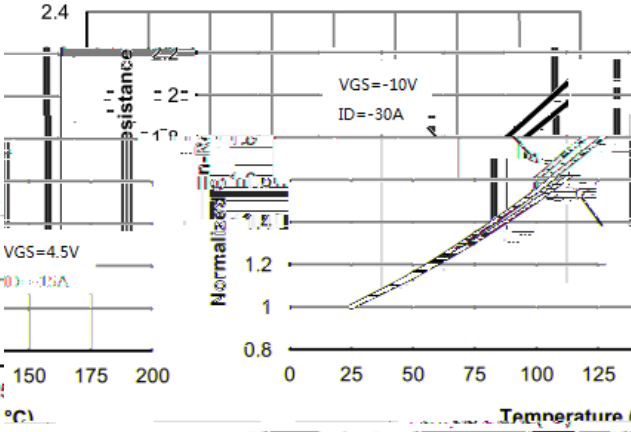


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

Figure 4: On-Resistance vs. Junction Temperature

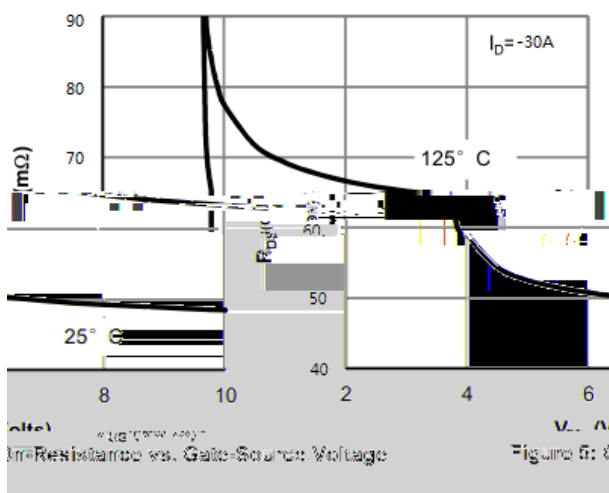
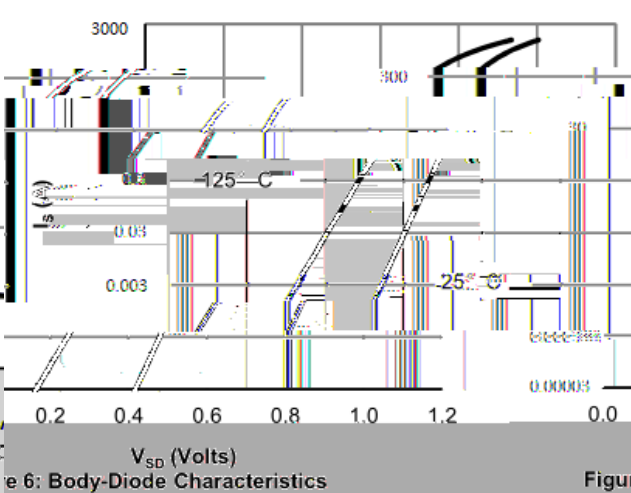
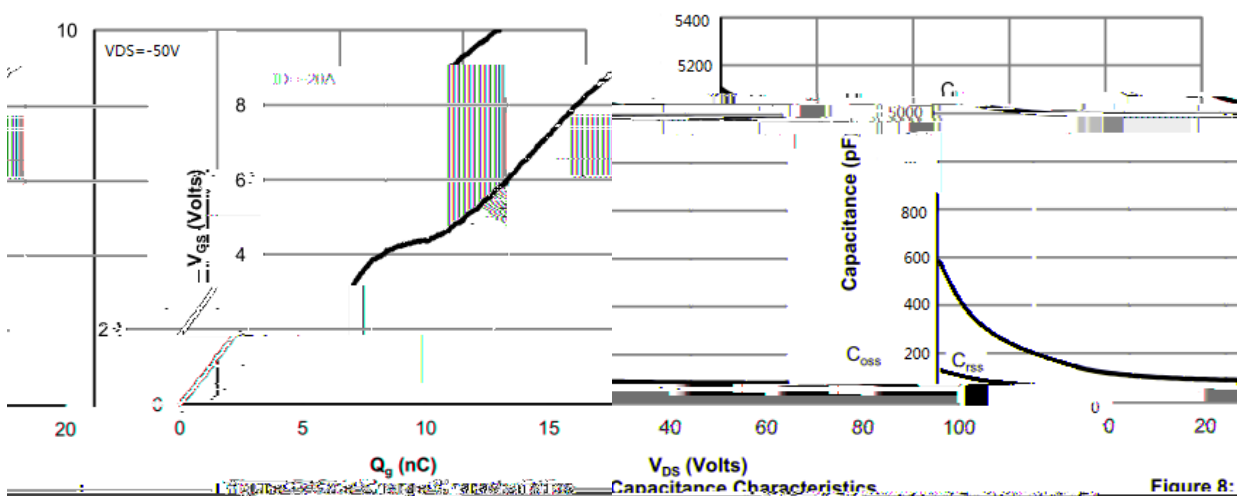
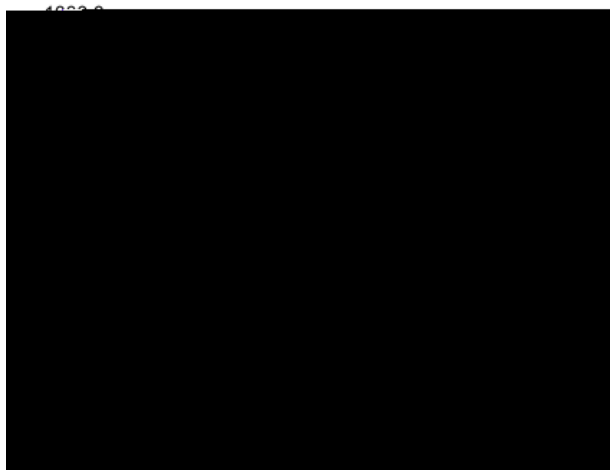
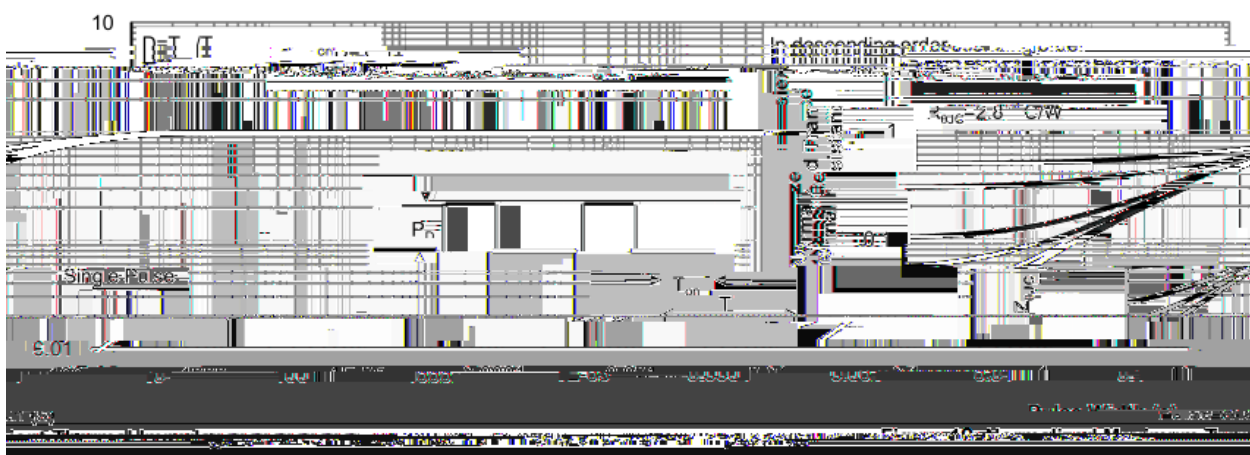


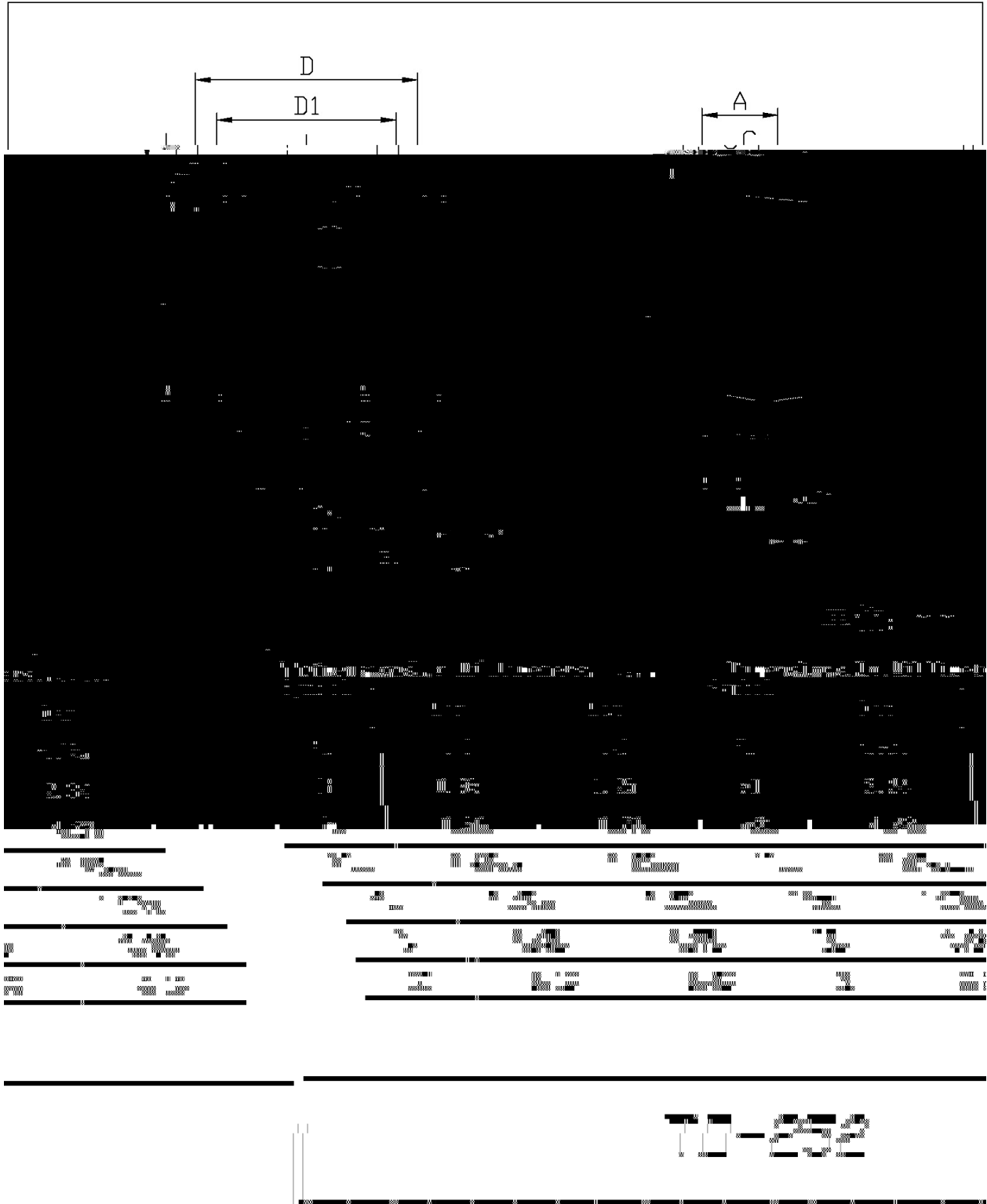
Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

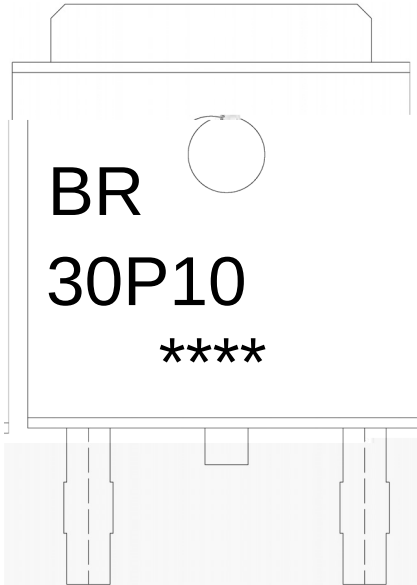
Electrical Characteristic Curve



Ø □ =) ☉ / Package Dimensions



, M y f / Marking Instructions



^a ¢ y
BR y , [W A
30P10 y ° Z W A
 y ÿ D Z W A k š ÿ D Z J ož

Note:

BR: Company Code

30P10: Product Type Code.

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

BRCS30P10DP
Rev.A Sep.-2018