

/ Descriptions

TO-252

P

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

/ Features

 $V_{DS} (V) = -60V$ $I_D = -20A$ ($V_{GS} = \pm 20V$) $R_{DS(ON)} @ -10V \leq 75m\Omega$ (Typ. 62m Ω) $R_{DS(ON)} @ -4.5V \leq 100m\Omega$ (Typ. 70m Ω)

HF Product.

/ Applications

DC/DC

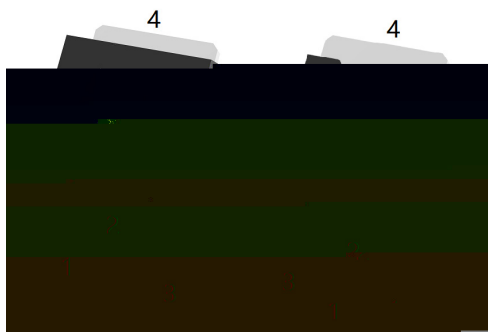
Suited for low voltage applications such as automotive, DC/DC Converters, and high efficiency switching for power management in portable and battery operated products.

/ Equivalent Circuit



OS

/ 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}	-60	V
Gate-Source Voltage	V_{GSS}	± 20	V
Continuous Drain Current	$I_D (T_c=25^\circ\text{C})$	-20	A
Pulsed Drain Current	I_{DM}	-80	A
Avalanche Current	I_{AS}	-13.8	A
Avalanche energy $L=0.5\text{mH}$	E_{AS}	95	mJ
Power Dissipation for Single Operation	$P_D (T_c=25^\circ\text{C})$	45	W
Maximum Junction Temperature	T_j	150	
Storage Temperature Range	T_{stg}	-55 ~ 150	
Thermal Resistance- Junction-to-Ambient	$R_{\theta JA}$	50	/W
Thermal Resistance- Junction-to-Case	$R_{\theta JC}$	2.8	/W

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D=-250\mu\text{A}$ $V_{GS}=0\text{V}$	-60	-69		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=-60\text{V}$ $V_{GS}=0\text{V}$			-1.0	
Gate-Body leakage current	I_{GSS}	$V_{DS}=0\text{V}$ $V_{GS}=\pm 20\text{V}$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=-250\mu\text{A}$	-1.0	-1.5	-2.5	V
		$V_{GS}=-10\text{V}$ $I_D=-20\text{A}$		62	75	mΩ
		$V_{GS}=-4.5\text{V}$ $I_D=-10\text{A}$		70	100	
		$V_{GS}=0\text{V}$			-1.0	V

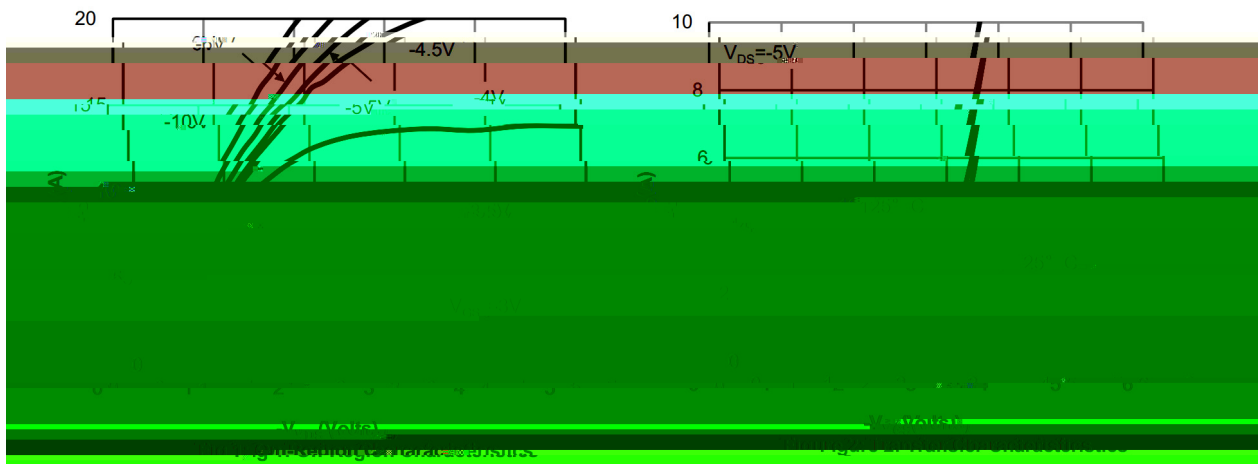
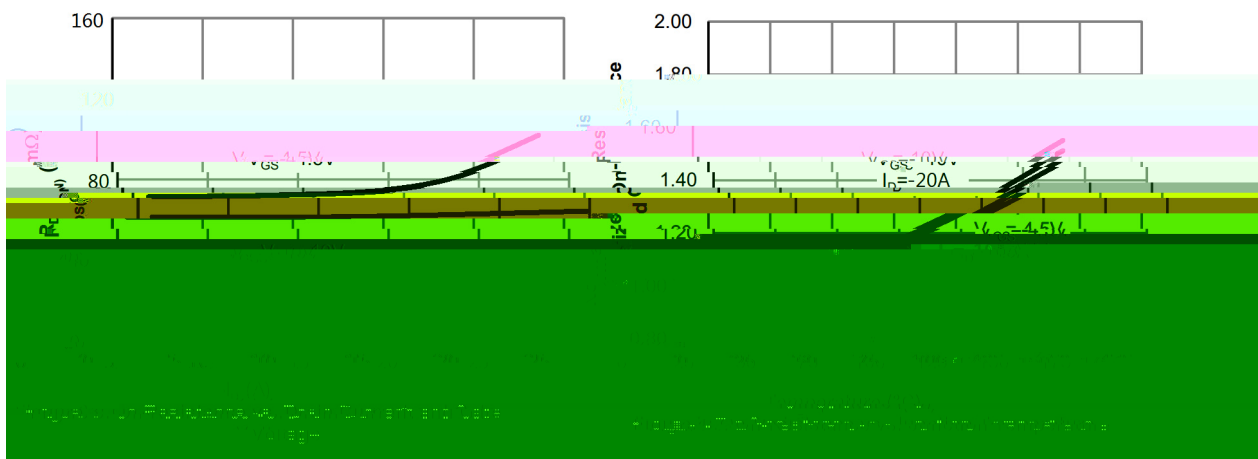
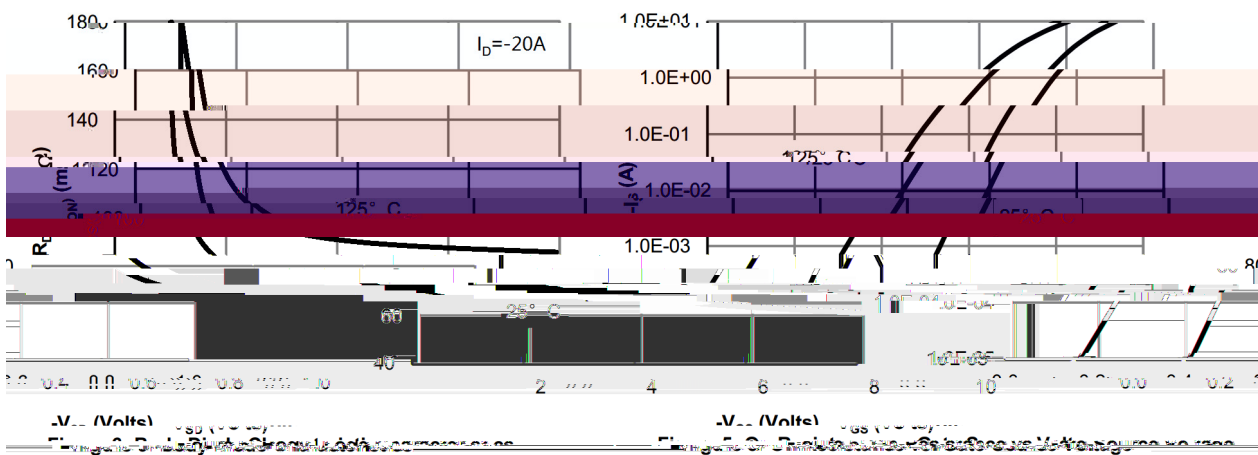
 $V_{GS}=0\text{V}$ $V_{DS}=-25\text{V}$ 62



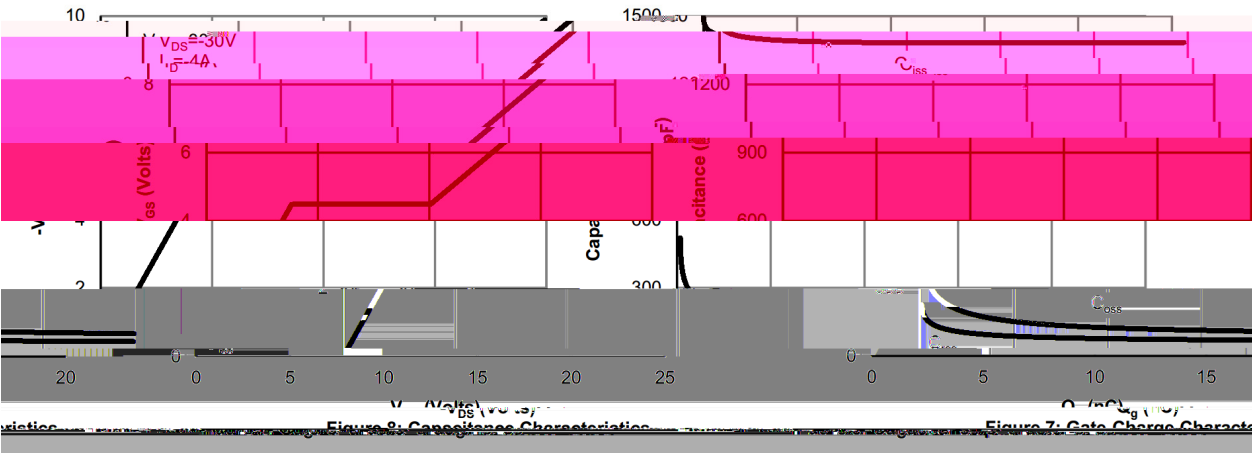
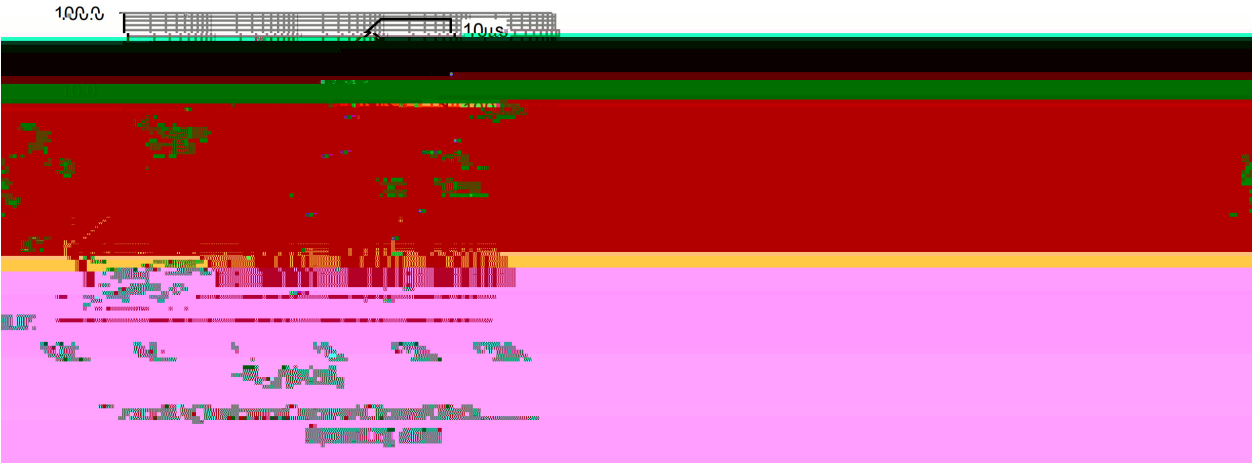
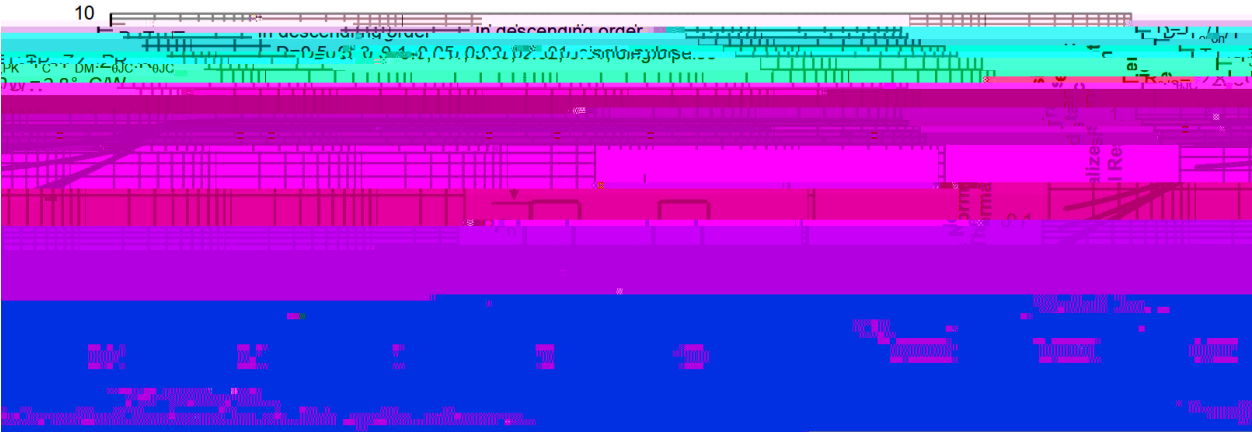
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-on Delay Time	$t_{d(ON)}$	$V_{GS}=-10V$ $V_{DS}=-30V$ $R_L=7.5\Omega$ $R_{GEN}=3\Omega$		8		ns
Turn-on Rise Time	t_r			3.8		
Turn-off Delay Time	$t_{d(OFF)}$			31.5		
Turn-off Fall Time	t_f			7.5		

/ Electrical Characteristic Curve



/ Electrical Characteristic Curve



/ Package Dimensions

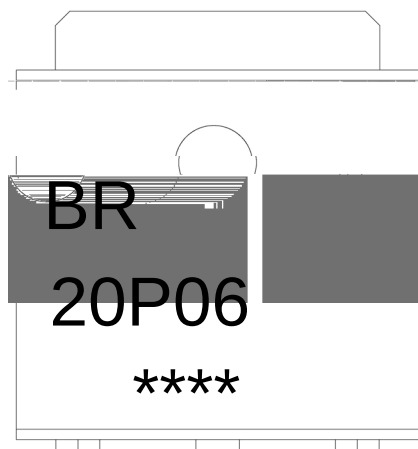


单位: mm

Symbol I		Symbol	
Max	Min	Max	Min
6.25	3.30	2.40	5.95
0.50	0.90	0.20	0.70
0.45	0.55	9.45	9.95
0.60	0.69	0.75	1.20
5.16	5.56	0.00	0.00

— 252 —

/ Marking Instructions



BR

20P06

Note:

BR: Company Code

20P06: Product Type Code

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

BRCS20P06DP