/ Descriptions

TO-252 P MOS

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

/ Features

V_{DS}(V)=-100V I_D=-22A

$R_{DS(ON)}$@-10V<70mΩ(Typ.67mR)

$R_{DS(ON)}$@-4.5V<85mΩ(Typ.70mR)

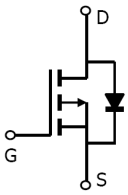
AEC-Q101 Qualified to AEC-Q101 Standards for High Reliability, HF Product.

/ Applications

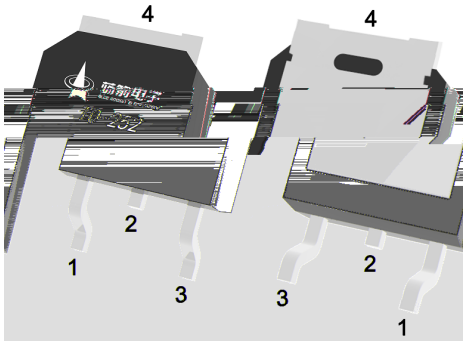
DC/DC

Power Management of Industrial DC/DC Converter, 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.

/ Absolute Maximum Ratings(T_a=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-100	V
Drain Current - Continuous		I_D(T_c=25)	-22	A
Drain Current – Pulsed		I_{DM}	-66	A
Gate-Source Voltage		V_{GS}	20	V
Power Dissipation		P_D(T_c=25)	75	W
Single Pulse Avalanche Energy(L=0.5mH)		E_{AS}	176.4	mJ
Avalanche Current(L=0.5mH)		I_{AS}	-21	A
Junction and Storage Temperature Range		T_j, T_{stg}	-55 to 150	
Thermal resistance, junction - ambient	Steady-State	R JA	62	/ W
Thermal resistance, junction - case	Steady-State	R JC	1.67	

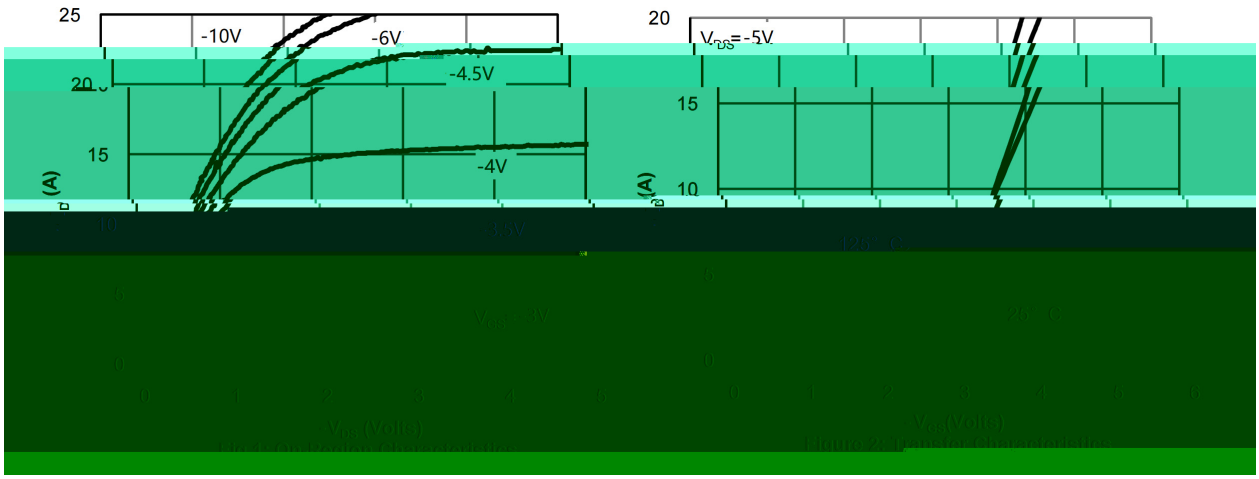
/ Electrical Characteristics(Ta=25)

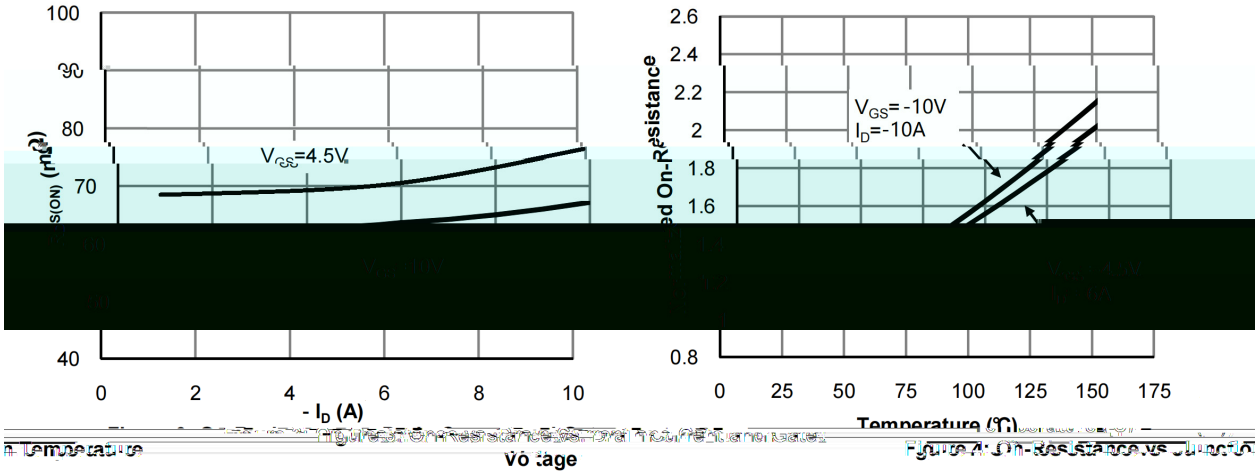
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250μA V_{GS}=0V	-100	-113		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-100V V_{GS}=0V			-1	uA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}= ±20V			100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_D=-250μA	-1	-2.0	-2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-10A		67	70	mΩ
		V_{GS}=-4.5V, I_D=-6A		70	85	
Diode Forward Voltage	V_{SD}	I_S=-1A, V_{GS}=0V			-1.2	V
Input Capacitance	C_{iss}	V_{DS}=-15V V_{GS}=0V f=1.0MHz		2820		pF
Output Capacitance	C_{oss}			840		
Reverse Transfer Capacitance	C_{rss}			670		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		2.7		Ω
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=-10V, V_{DS}=-50V, I_D=-5A		5.9		nC
Total Gate Charge	$Q_{g(4.5V)}$			2.7		
Gate Source Charge	Q_{gs}			1.2		
Gate Drain Charge	Q_{gd}			1.2		

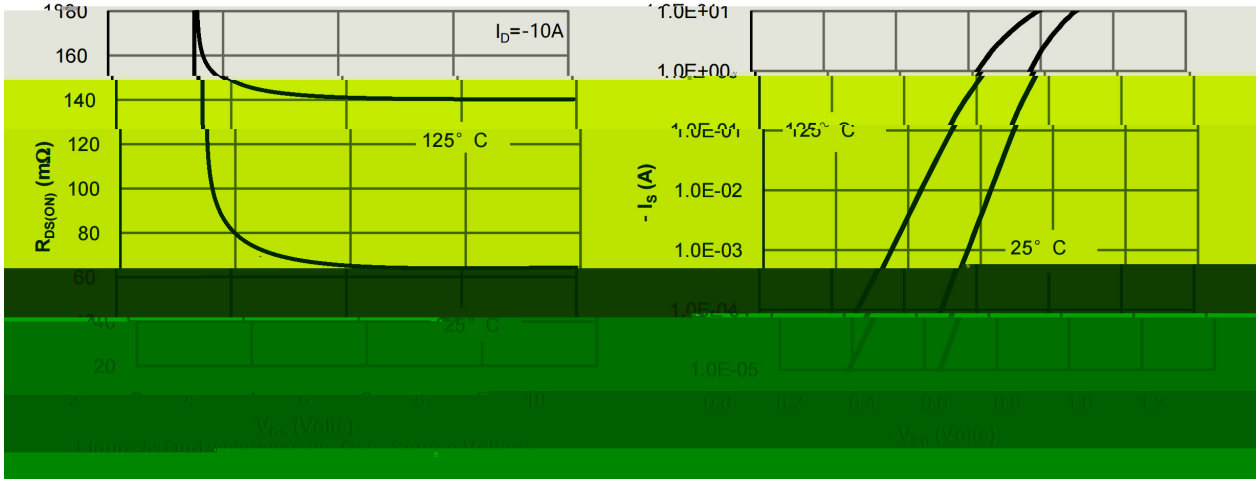
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=-10V V_{DS}=-50V R_L=10 R_{GEN}=3		6		ns
Turn-On Rise Time	t_r			2.4		
Turn-Off Delay Time	$t_{d(off)}$			19		
Turn-Off Fall Time	t_f			2.6		

/ Electrical Characteristic Curve







/ Electrical Characteristic Curve

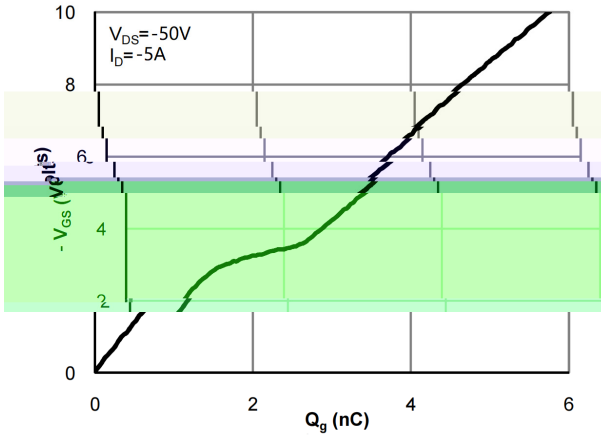


Figure 7: Gate-Charge Characteristics

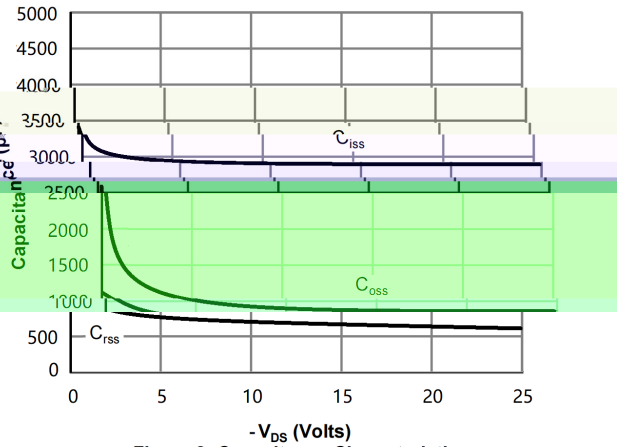
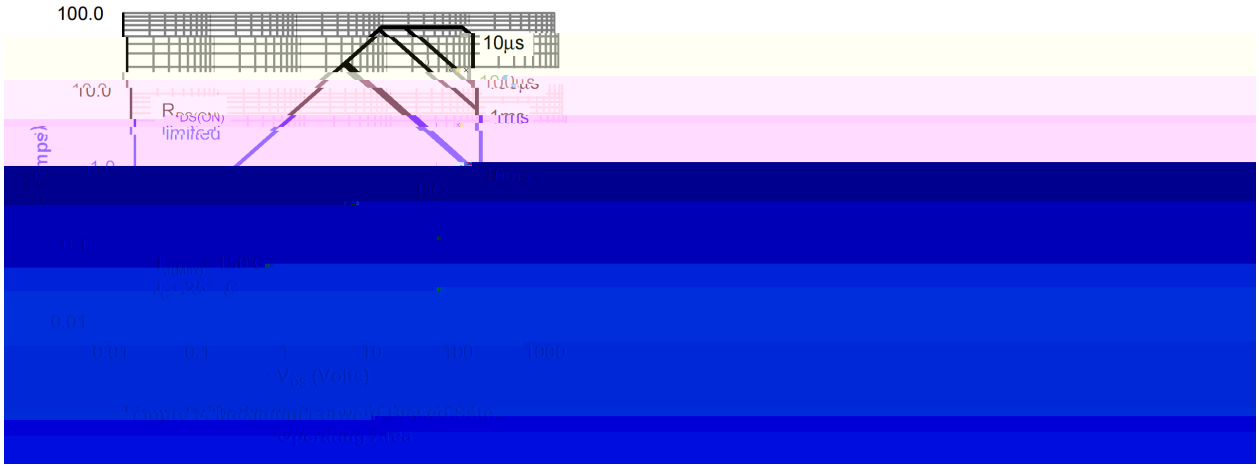
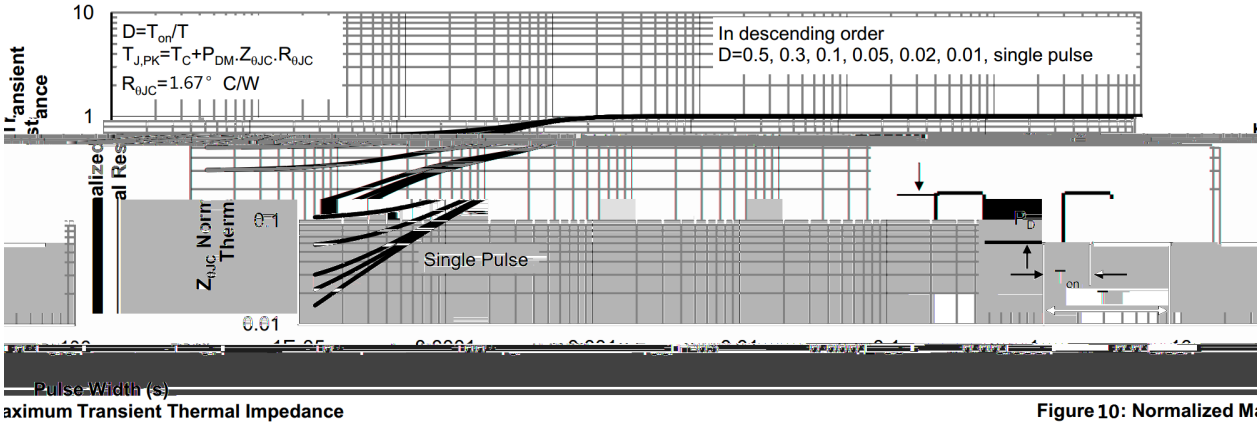


Figure 8: Capacitance Characteristics

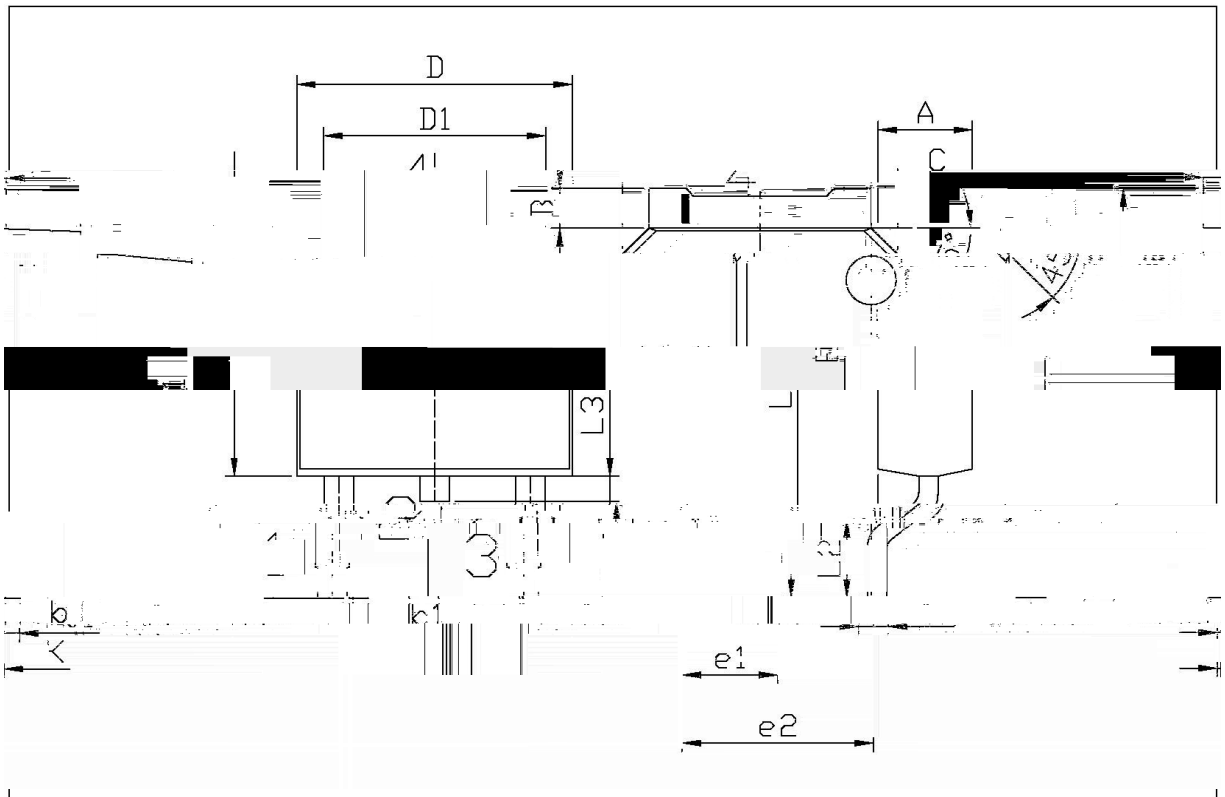




aximum Transient Thermal Impedance

Figure 10: Normalized M

/ Package Dimensions

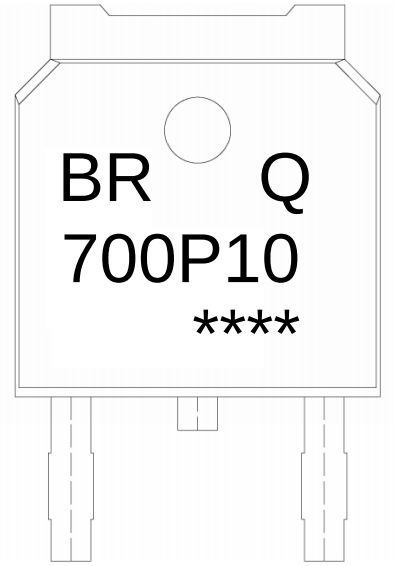


单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max.		Min	Max
A	2.20	2.40	E	6.35	6.65
B	2.24	2.34	e1	0.95	1.25
b	0.70	0.90	e2	4.72	4.92
b1	0.45	0.55	L1	9.85	10.35
C	0.45	0.55	L2	1.70	2.00
C1	0.60	0.90	D	6.45	6.75
K	0.00	0.10	D1	5.10	5.50

TO-252

/ Marking Instructions



BR

Q

700P10

****

Note:

BR:	Company Code
Q:	Automobile halogen-free product Code
700P10:	Product Type Code
****:	Lot No. Code, code change with Lot No

( ) /

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.