/ 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<70m (Typ.67mR)

$R_{DS(ON)}$@-4.5V<85m (Typ.70mR)

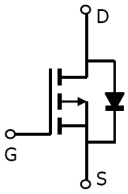
HF Product.

/ Applications

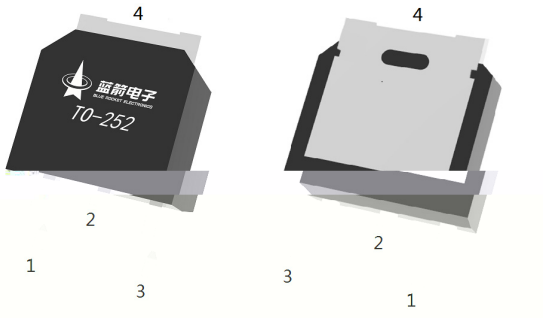
DC/DC

Power Management of Industrial DC/DC Converter.

/ 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	$R_{\theta JA}$	62	/ W
Thermal resistance, junction - case	Steady-State	$R_{\theta JC}$	1.67	/ W

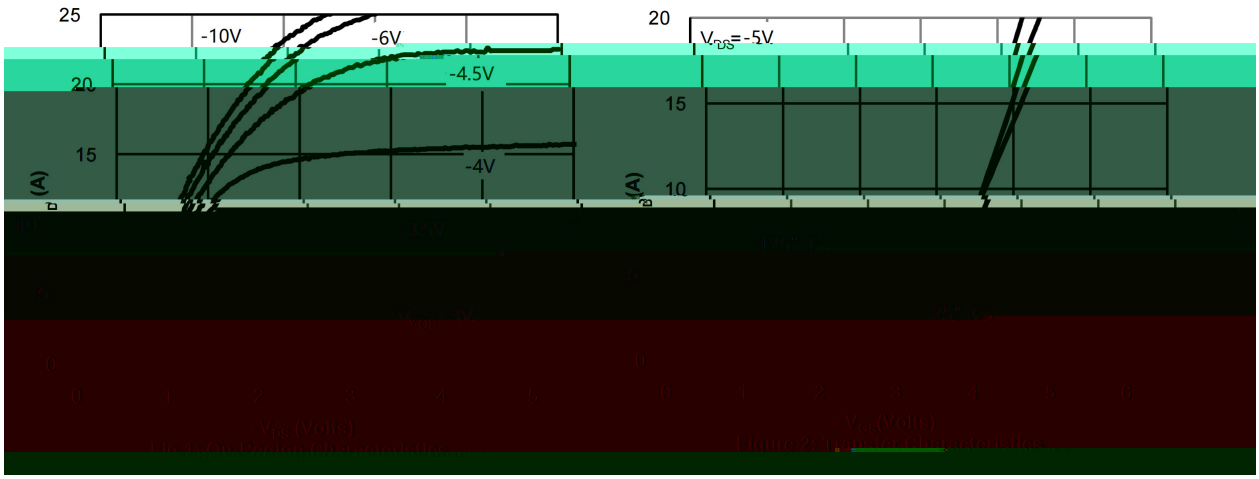
/ Electrical Characteristics(Ta=25)

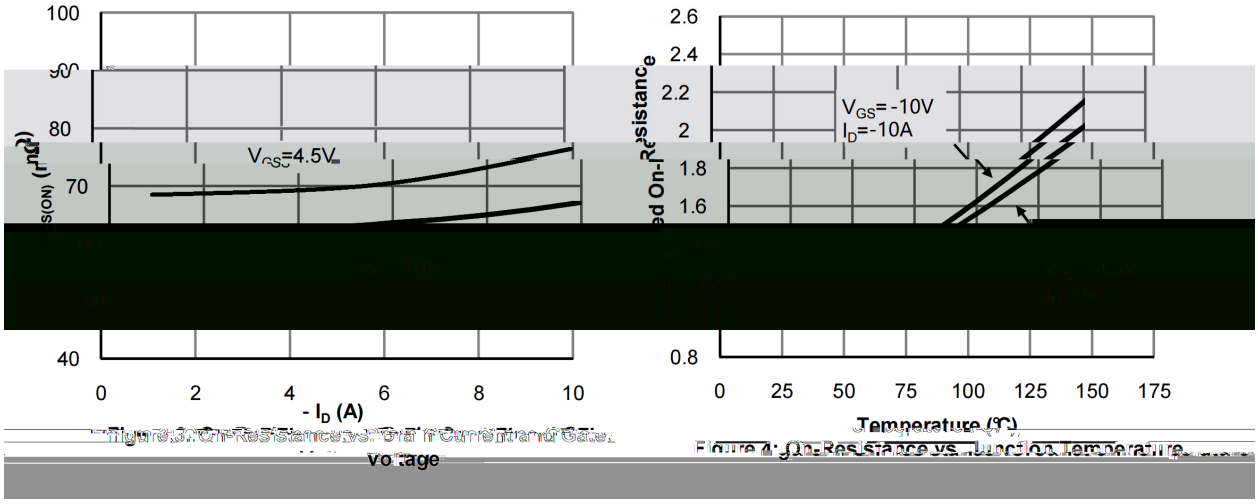
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	I_D=-250 A V_{GS}=0V	-100	-113		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-100V V_{GS}=0V			-1	uA
Gate-Body leakage current	I_{GSS}	V_{DS}=0V, V_{GS}= ±20V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=VGS I_D=-250 A	-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	mΩ
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		pF
Reverse Transfer Capacitance	C_{rss}			670		pF
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		2.7		
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		nC
Gate Source Charge	Q_{gs}			1.2		nC
Gate Drain Charge	Q_{gd}			1.2		nC

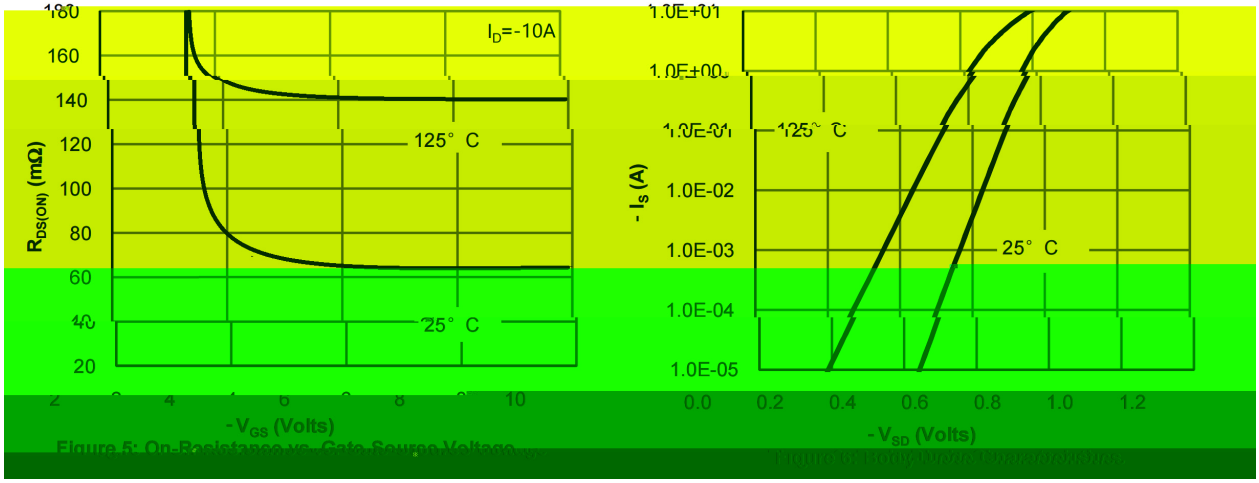
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=-10V V_{DS}=-50V R_L=10Ω R_{GEN}=3Ω		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

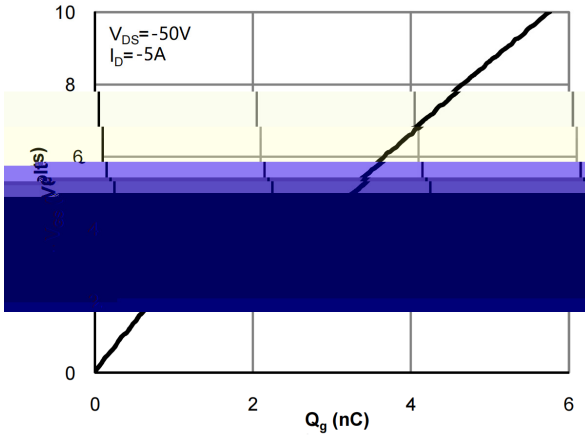


Figure 7: Gate-Charge Characteristics

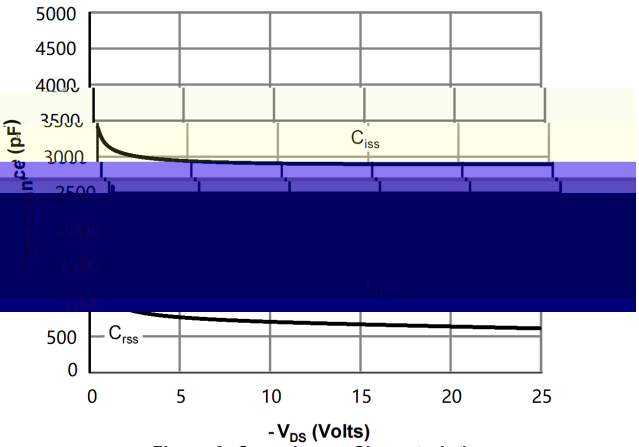
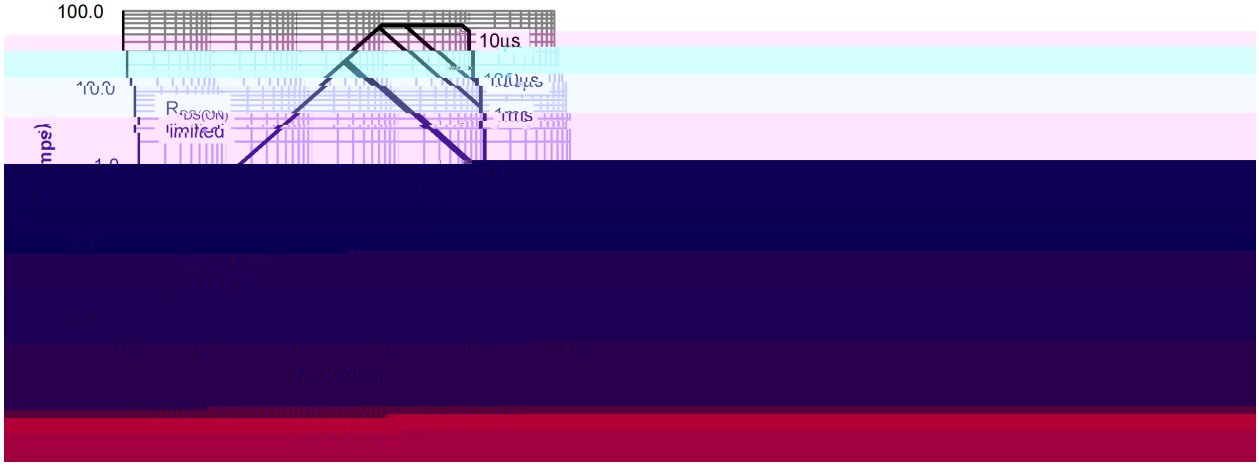


Figure 8: Capacitance Characteristics



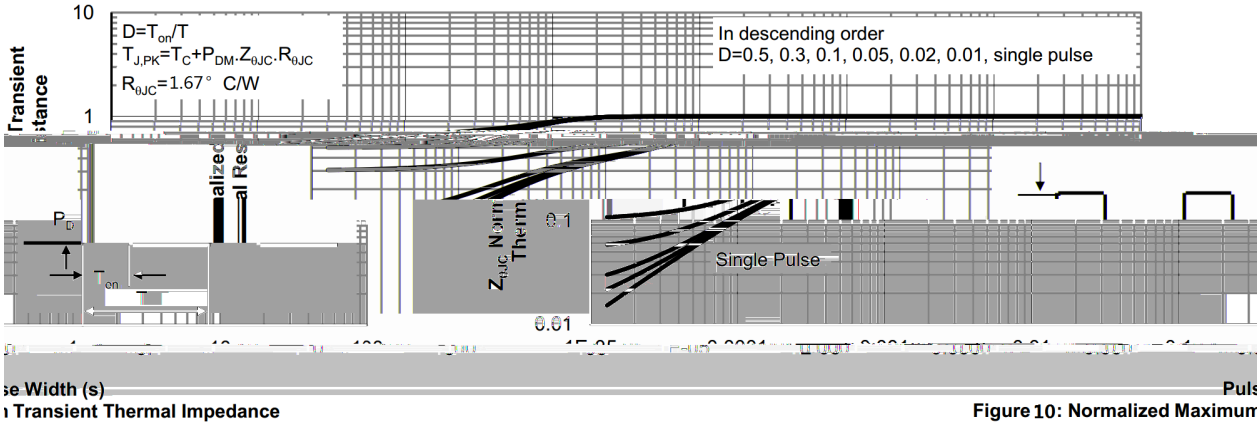
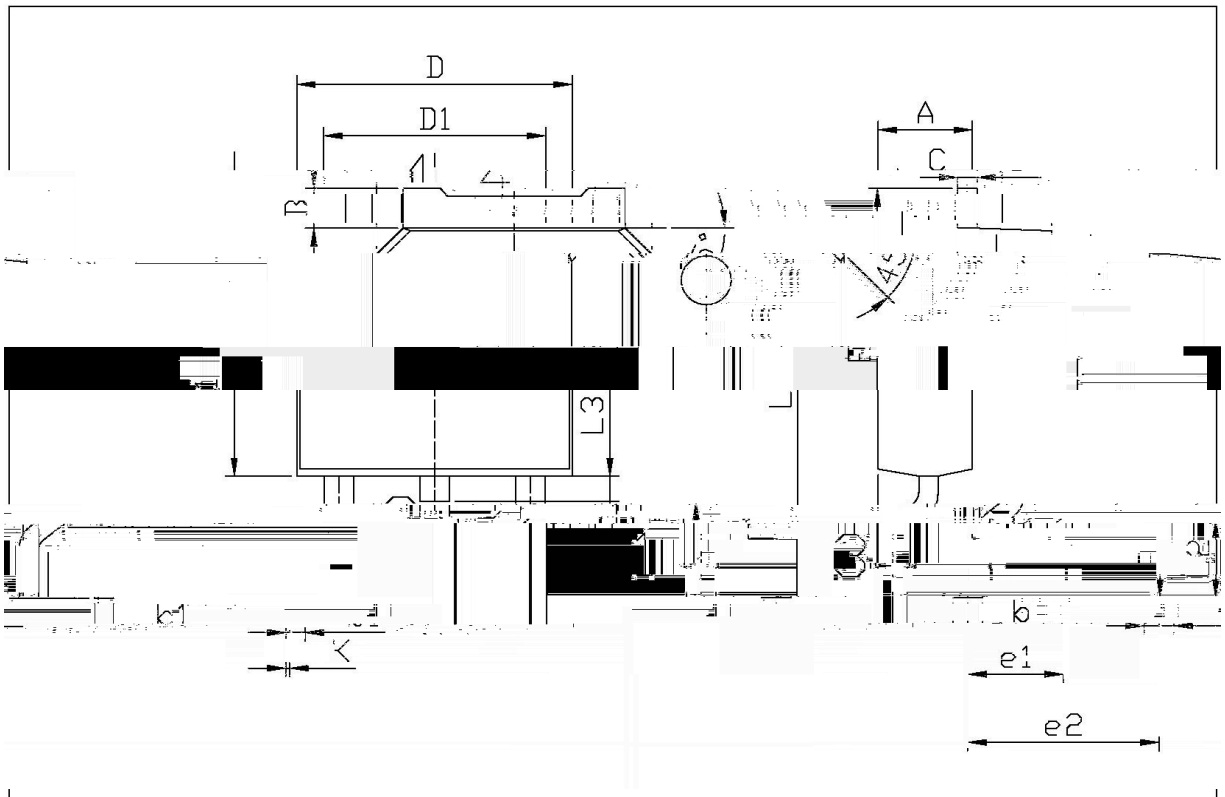


Figure 10: Normalized Maximum

/ Package Dimensions

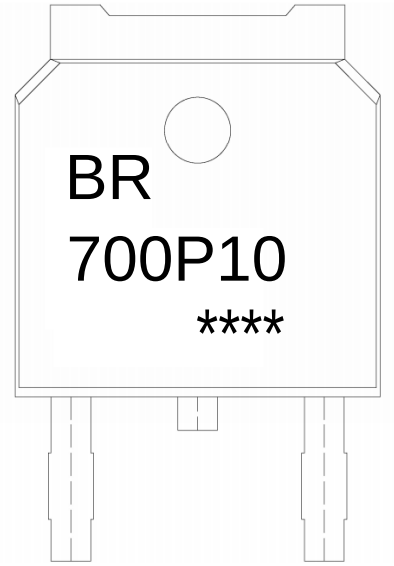


单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max		Min	Max
A	2.20	2.40	E	5.95	6.25
B	0.95	1.25	e1	2.24	2.34
b	0.70	0.90	b2	4.42	4.72
L1	9.85	10.35	b1	0.45	0.55
C	0.45	0.55	L2	1.70	2.00
L3	0.60	0.90	D	6.45	6.75
K	0.00	0.10	D1	5.10	5.30

52 TO-25

/ Marking Instructions



BR

700P10

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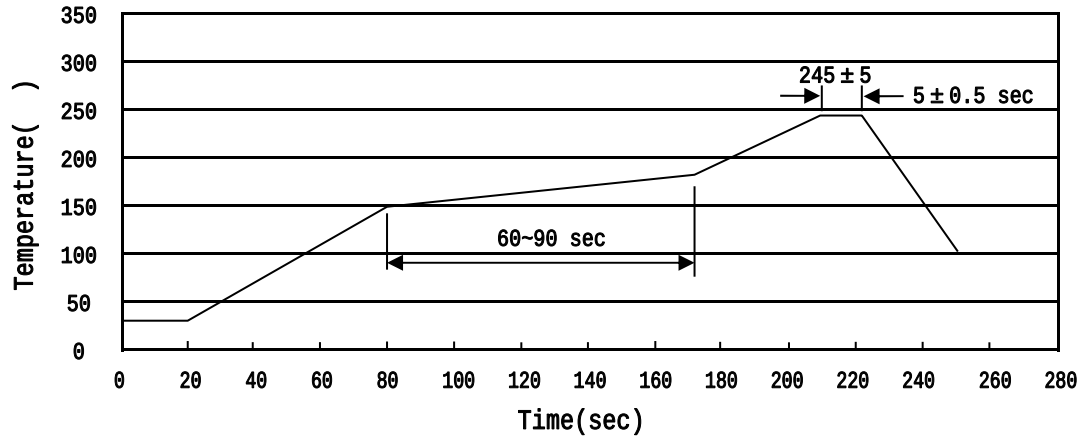
Note:

BR:	Company Code
700P10:	Product Type
****:	Lot No. Code, code change with Lot No

( ) / Temperature Profile for IR Reflow Soldering(Pb-Free)



1		150	180		60	90sec;	
2		245±5				5±0.5sec;	
3				2	10	/sec.	

Note:

1.Preheating:150~180 , Time:60~90sec.

2.Peak Temp.:245±5 , Duration:5±0.5sec.

3. Cooling Speed: 2~10 /sec.

/ Resistance to Soldering Heat Test Conditions

260±5	10±1 sec.	Temp.:260±5	Time:10±1 sec

/ Packaging SPEC.

/ REEL

Package Type	Units					Dimension		(unit mm³)
	Units/Reel /	Reels/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Reel	Inner Box	Outer Box
TO-252	2,500	2	5,000	6	30,000	13″ ×16	360×360×50	380×335×366

/ TUBE

Package Type	Units					Dimension		(unit mm³)
	Units/Tube /	Tubes/Inner Box /	Units/Inner Box /	Inner Boxes/Outer Box /	Units/Outer Box /	Tube	Inner Box	Outer Box
TO-251/252	75	48	3,600	5	18,000	526×20.5×5.25	555×164×50	575×290×180

/ Notices