TO-252 N MOS

N-Channel Enhancement Mode Field Effect Transistor in a TO-252 Plastic Package.

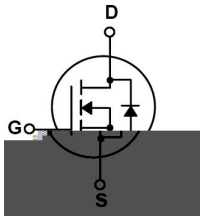
V_{DS} (V) = 30V I_D =122 A (V_{GS} = ±20V)

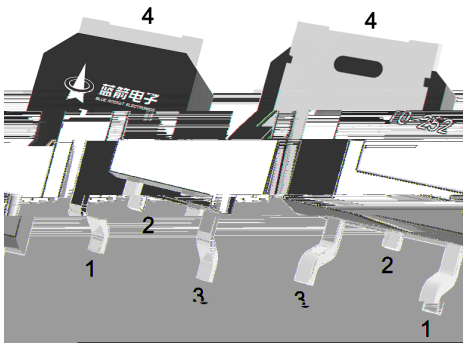
$R_{DS(ON)}$@10V≤3.5mΩ(Typ.3.4mΩ)

$R_{DS(ON)}$@4.5V≤6.5mΩ(Typ.5.0mΩ)

- HF Product.

Load Switch Applications,Battery Power Management.





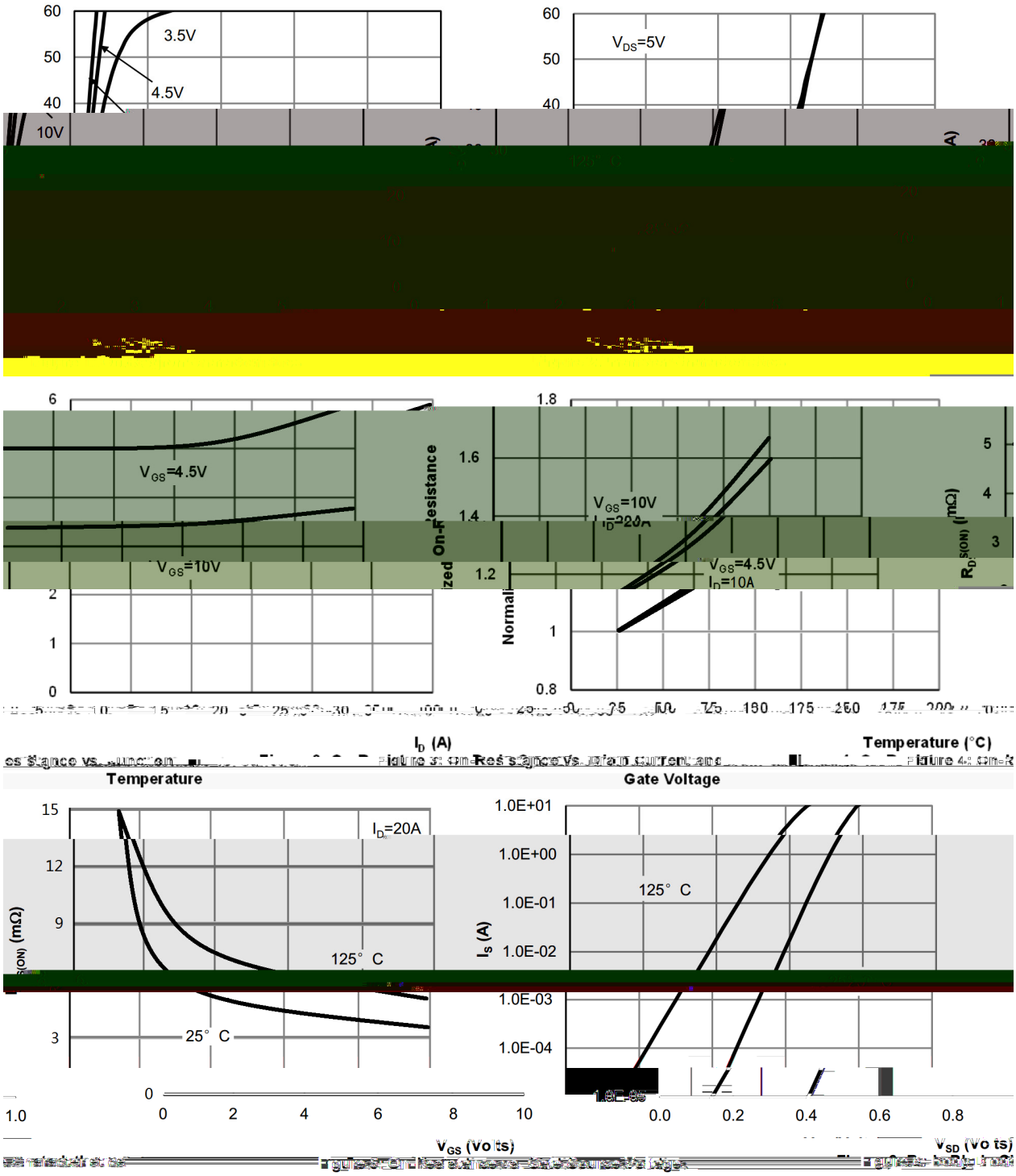
PIN1 G PIN 2 4 D PIN 3 S

See Marking Instructions.

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DSS}	30	V
Drain Current		I_D(Tc=25)	122	A
		I_D(Tc=100)	86	A
Drain Current - Pulsed		I_{DM}	260	A
Gate-Source Voltage		V_{GSS}	±20	V
Single Pulsed Avalanche Energy		E_{AS}	281	mJ
Avalanche Current		I_{AS}	26.5	A
Power Dissipation		P_D(Tc=25℃)	88	W
Junction and Storage Temperature Range		T_J,T_{stg}	-55 to 150	
Junction-to-Ambient	t≤10	$R_{\theta JA}$	22	℃/W
Junction-to-Ambient	Steady-State		50	
Junction-to-Case	Steady-State	$R_{\theta JC}$	1.42	

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	BV_{DSS}	V_{GS}=0V I_D=250μA	30	33		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V V_{GS}=0V			1	μA
Gate-Body Leakage Current Forward	I_{GSS}	V_{GS}=±20V V_{DS}=0V			±0.1	μA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} I_D=250μA	1.0	1.7	3.0	V
Static Drain-Source On-Resistance	$R_{DS(on)1}$	V_{GS}=10V I_D=20A		3.4	3.5	mΩ
	$R_{DS(on)2}$	V_{GS}=4.5V I_D=10A		5.0	6.5	mΩ
Drain-Source Diode Forward Voltage	V_{SD}	V_{GS}=0V I_S=1A			1.4	V
Input Capacitance	C_{iss}	VDS=25V VGS=0V f=1MHz		2200		pF
Output Capacitance	C_{oss}			145		
Reverse Transfer Capacitance	C_{rss}			210		
Gate resistance	R_g	V_{GS}=0V V_{DS}=0V f=1MHz		2.0		Ω

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Gate Charge	$Q_{g(10V)}$	V_{GS}=10V V_{DS}=15V I_D=20A		32		nC
Total Gate Charge	$Q_{g(4.5V)}$			15		
Gate Source Charge	Q_{gs}			5.2		
Gate Drain Charge	Q_{gd}			6.5		
Turn-On Delay Time	$t_{d(on)}$	V_{GS}=10V V_{DS}=15V R_L=0.75Ω R_{GEN}=3Ω		8.5		ns
Turn-On Rise Time	t_r			4.2		
Turn-Off Delay Time	$t_{d(off)}$			30		
Turn-Off Fall Time	t_f			5.7		


60
50
40
3.5V
4.5V
10V
V_{DS}=5V
6
V_{GS}=4.5V
V_{GS}=10V
2
1
0
1.8
1.6
1.4
1.2
1
0.8
V_{GS}=10V
I_D=22A
V_{GS}=4.5V
I_D=10A
5
4
3
I_D (A)
Temperature (°C)
Temperature
Gate Voltage
15
12
9
3
I_D=20A
125° C
25° C
0
1.0
2
4
6
8
10
V_{GS} (volts)
1.0E+01
1.0E+00
1.0E-01
1.0E-02
1.0E-03
1.0E-04
125° C
I_S (A)
0.0
0.2
0.4
0.6
0.8
V_{SD} (volts)

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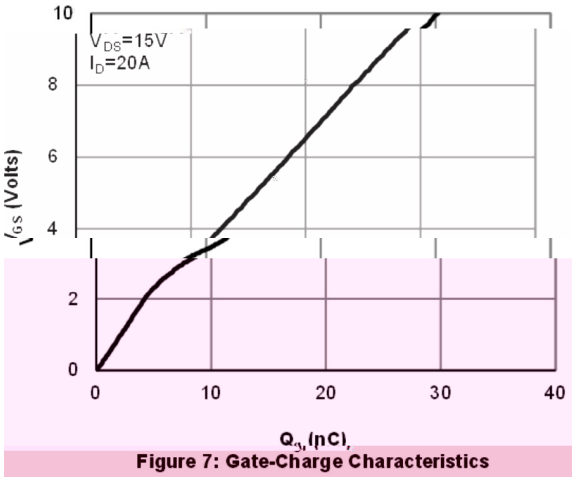


Figure 7: Gate-Charge Characteristics

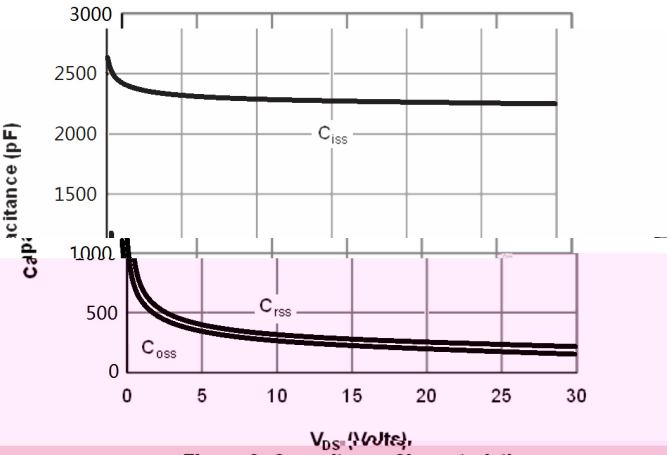


Figure 8: Capacitance Characteristics

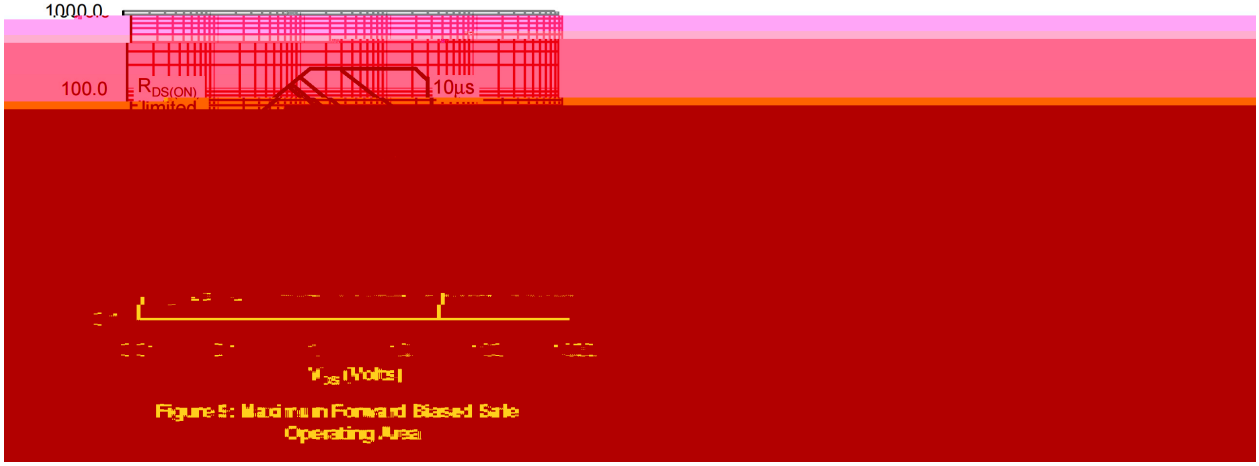
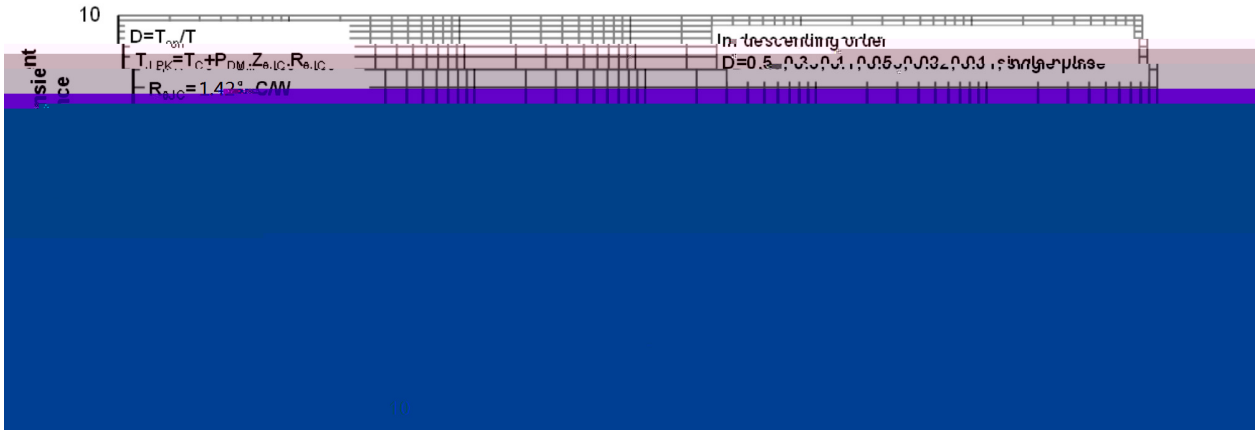
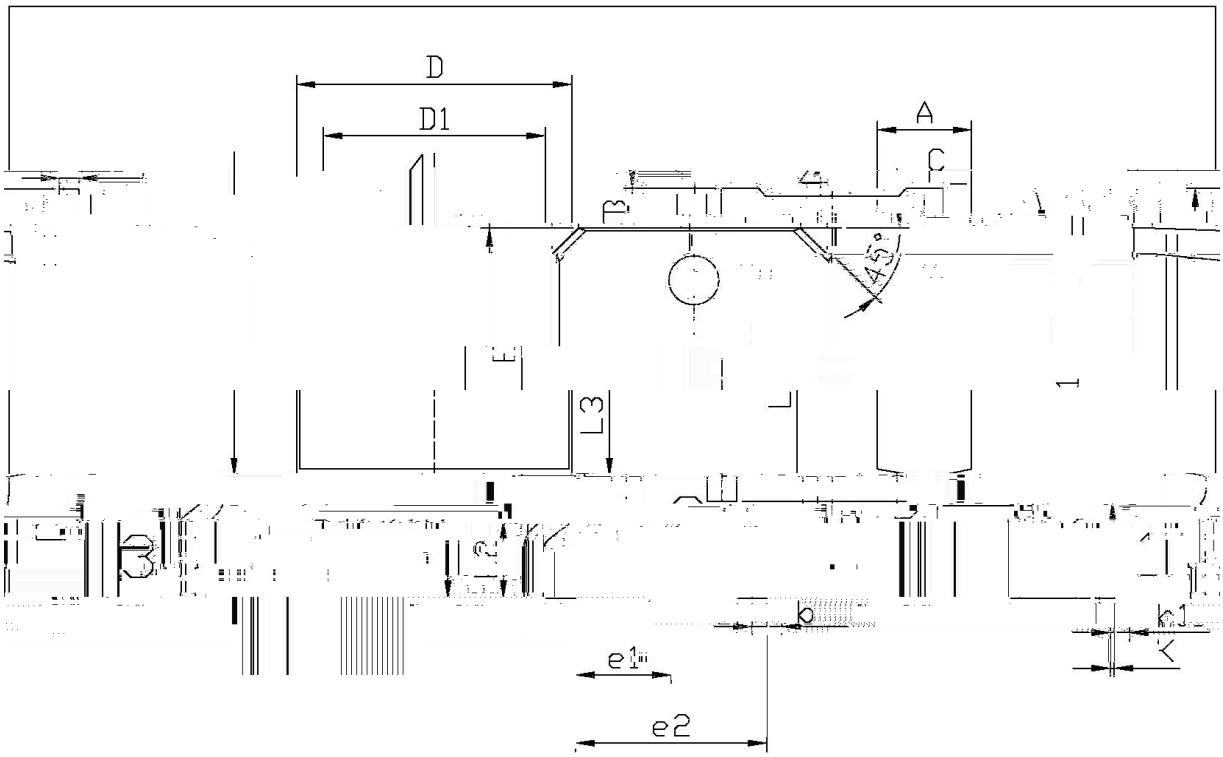


Figure 9: Maximum Forward Biased Safe Operating Area

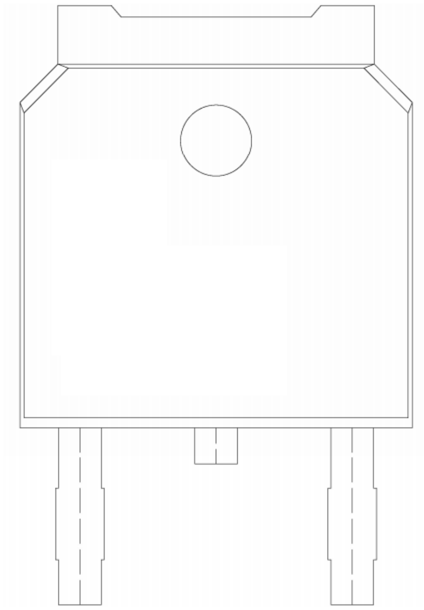




单位：mm

Symbol	Dimensions In Millimeters		Symbol	Dimensions In Millimeters	
	Min	Max.		Min	Max
E	5.95	6.25	A	2.20	2.40
e1	2.24	2.34	B	0.95	1.25
e2	4.42	4.72	b	0.70	0.90
0.55	L1	9.85	10.35	b1	0.45
c	0.45	0.55	L2	1.70	2.00
6.45	6.75	L3	0.60	0.90	D
5.10	5.50	K	0.00	0.10	D1

TO-252



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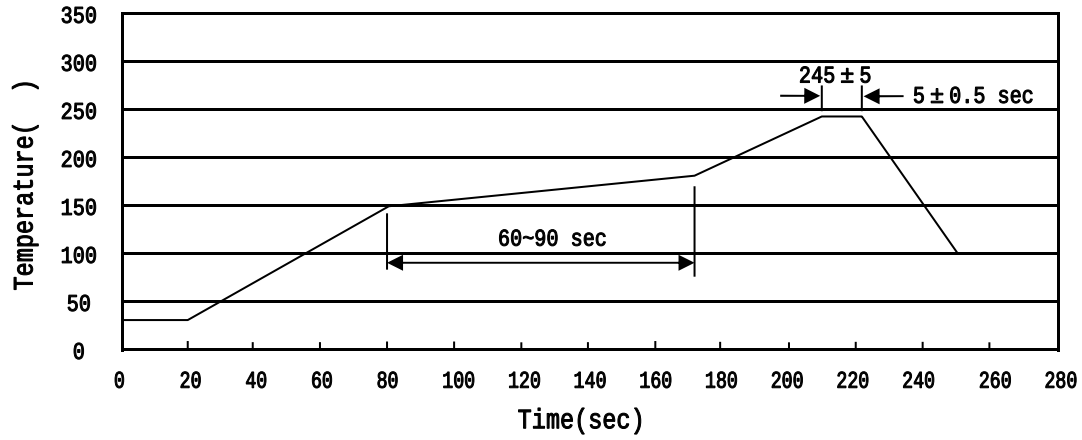
Temperature Profile for IR Reflow Soldering(Pb-Free)



		Note:	
1	150 180 60 90sec;	1.Preheating:150~180 , Time:60~90sec.	
2	245±5 5±0.5sec;	2.Peak Temp.:245±5 , Duration:5±0.5sec.	
3	2 10 /sec.	3. Cooling Speed: 2~10 /sec.	

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

/ 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