

BSS138G
Rev.F May.-2026

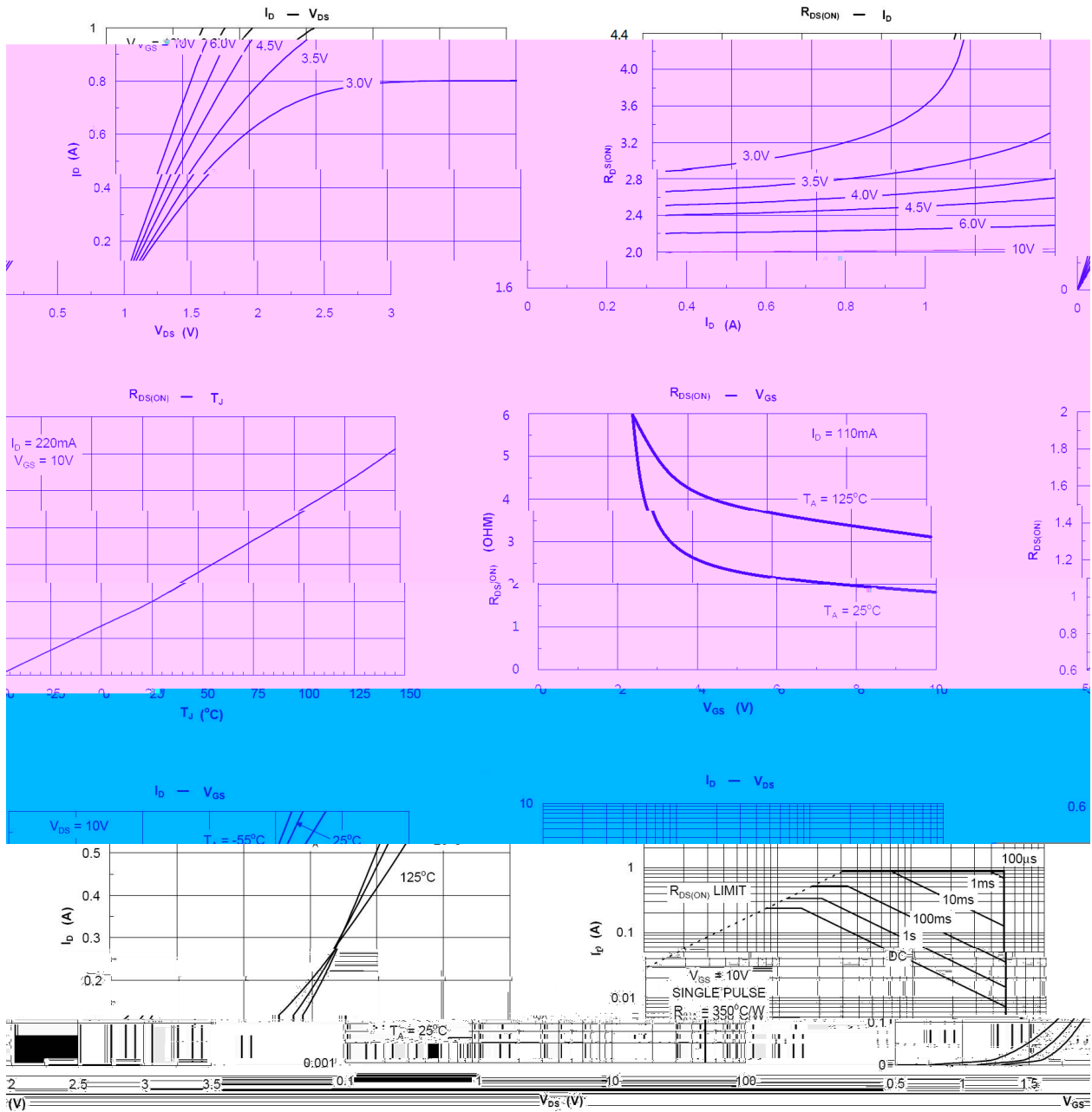
/ Absolute Maximum Ratings(Ta=25)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	50	V
Gate-Source Voltage	V_{GS}	± 20	V
Drain Current – Continuous	I_D	220	mA
Peak Drain Current	I_{DM}	880	mA
Power Dissipation	P_D	360	mW
Thermal Resistance, Junction-to-Ambient	R_{JA}	350	/W
Storage Temperature Range	T_{stg}	-55 150	

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	V_{DS}	$V_{GS}=0V$ $I_D=250\text{ A}$	50			V
Zero Gate Voltage Drain Current	$I_{DSS(1)}$	$V_{GS}=0$ $V_{DS}=50V$			0.5	A
	$I_{DSS(2)}$	$V_{GS}=0$ $V_{DS}=30V$			0.1	A
Gate–Body Leakage.	I_{GSS}	$V_{DS}=0V$ $V_{GS}=\pm 20$			± 10	A
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$ $I_D=1.0mA$	0.8	1.6	2.2	V
Static Drain–Source On–Resistance	$R_{DS(on)(1)}$	$V_{GS}=10V$ $I_D=220mA$		1.9	3.5	
	$R_{DS(on)(2)}$	$V_{GS}=4.5V$ $I_D=220mA$		2.5	6.0	
Forward Transconductance	g_{FS}	$V_{DS}=10V$ $I_D=220mA$	0.12	0.5		S
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0V$ $I_S=440mA$		0.8	1.4	V
Input Capacitance	C_{iss}	$V_{DS}=10V$ $V_{GS}=0V$ $f=1.0MHz$			50	pF
Output Capacitance	C_{oss}				25	
Reverse Transfer Capacitance	C_{rss}				8	
Gate Resistance	R_G	$V_{GS}=15mV$ $f=1.0MHz$		9		
Turn–On Delay Time	$t_{d(on)}$	$V_{DD}=30V$ $I_D=290mA$ $V_{GS}=10V$ $R_{GEN}=25$		2.5	5	ns
Turn–On Rise Time	t_r			9	18	ns
Turn–Off Delay Time	$t_{d(off)}$			20	36	ns
Turn–Off Fall Time	t_f			7	14	ns

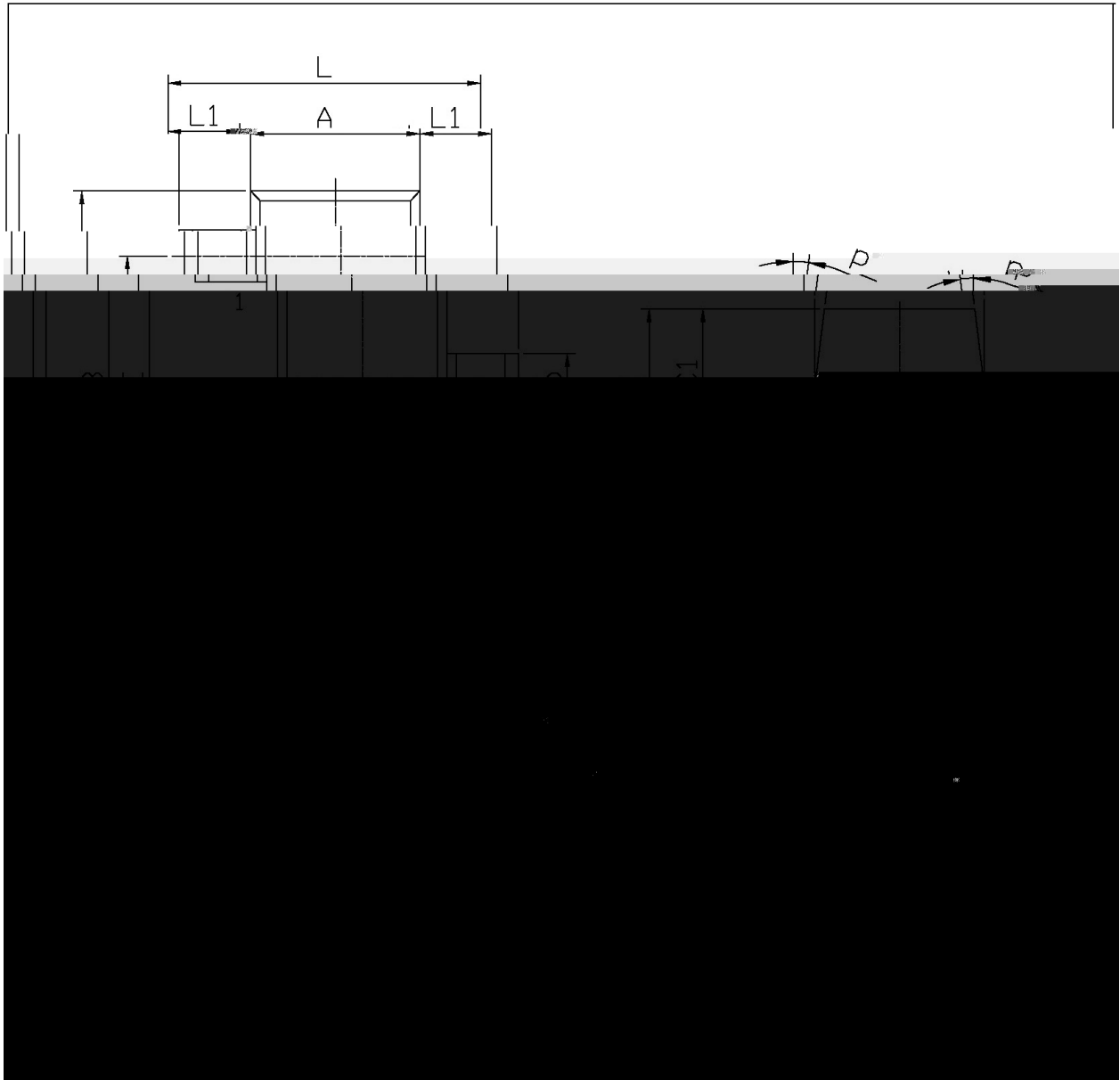
/ Electrical Characteristic Curve



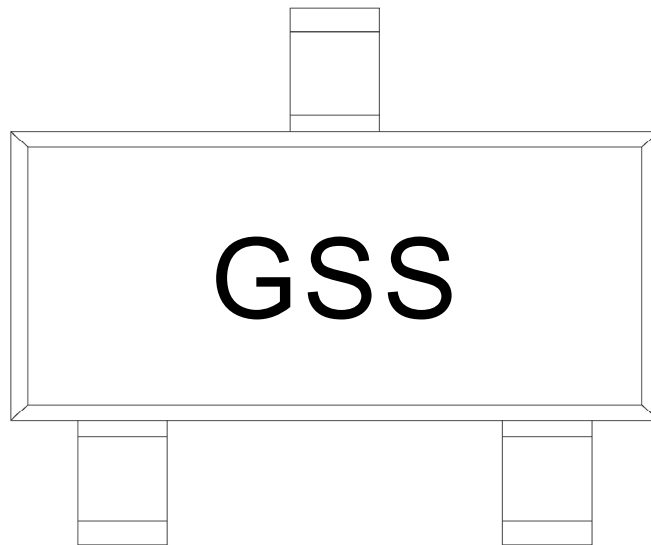
/ Package Dimensions

SOT-23

单位: mm



/ Marking Instructions



G

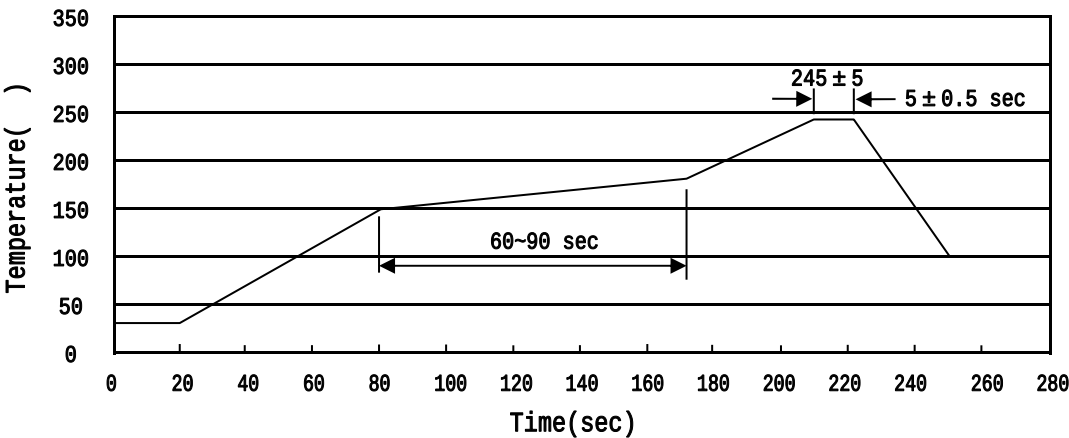
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Note:

G: HF Product Code

SS: Product Type Code

() / 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.

/ Resistance to Soldering Heat Test Conditions

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

/ Packaging SPEC.

/ REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SOT-23	3,000	10	30,000	6	180,000	7 ×8	180×120×180	390×385×205

/ Notices