

/ Descriptions

SOT-23 N MOS
N- CHANNEL MOSFET in a SOT-23 Plastic Package.

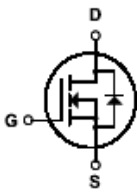
/ Features

$R_{DS(ON)}$ SOT-23
Super high dense cell design for low $R_{DS(ON)}$,SOT-23 package,HF Product.

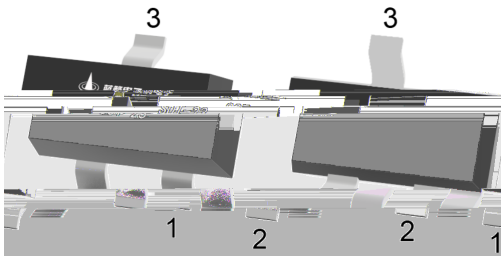
/ Applications

DC-DC
Battery management,High speed switch,low power DC to DC converter.

/ Equivalent Circuit



/ Pinning



PIN1 G PIN 2 S PIN 3 D

/ Marking

Marking	H310
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/ Absolute Maximum Ratings(Ta=25)

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	60	V
Gate-Source Voltage		V_{GS}	± 20	V
Drain Current – Continuous		I_D	3.0	A
Pulsed Drain Current		I_{DM}	15	A
Power Dissipation		P_D	0.9	W
Storage Temperature Range		T_{stg}	-55 150	$^{\circ}\text{C}$
Maximum Junction-to-Ambient	t 10s	R_{JA}	55	$^{\circ}\text{C/W}$
Maximum Junction-to-Ambient	Steady-State		139	

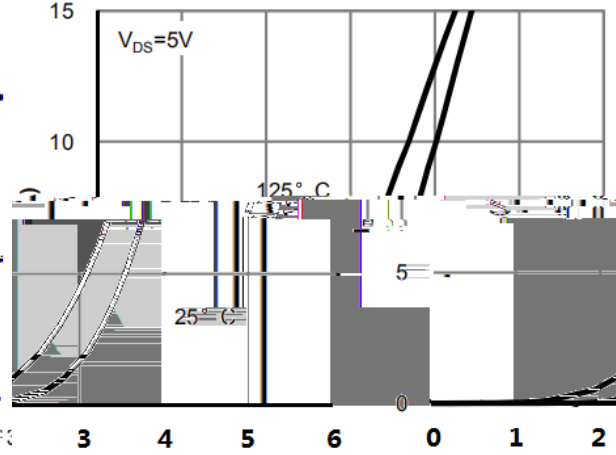
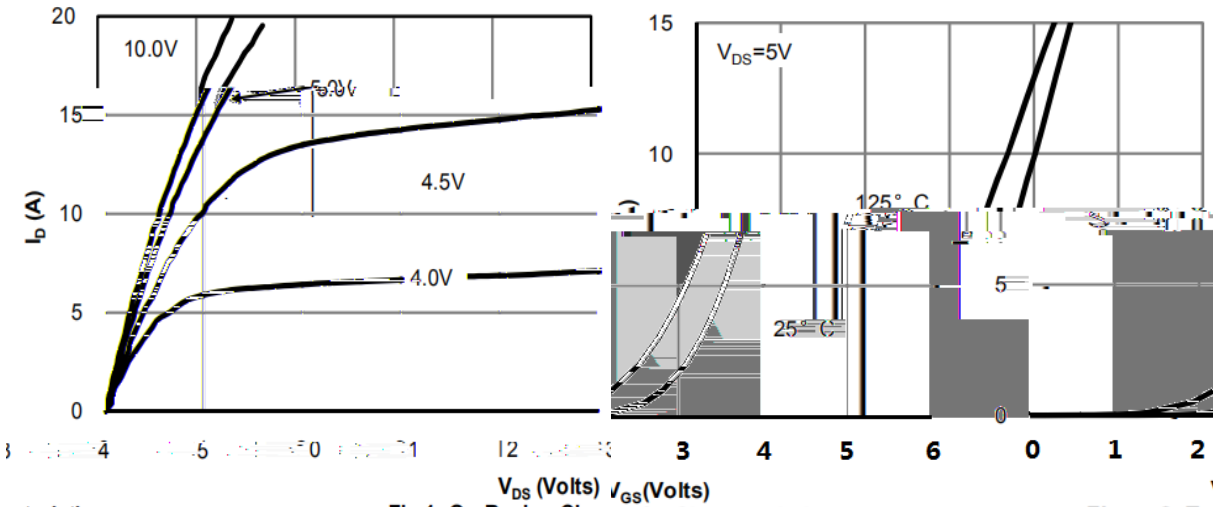
/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	$V_{(BR)DS}$	$V_{GS}=0$	$I_D=250\mu\text{A}$	60	68		V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{GS}=0$	$V_{DS}=60\text{V}$			1.0	μA
Gate–Body Leakage.	I_{GSS}	$V_{GS}=\pm 20\text{V}$	$V_{DS}=0\text{V}$			± 100	nA
Static Drain–Source On–Resistance	$R_{DS(on)1}$	$V_{GS}=10\text{V}$	$I_D=3\text{A}$		84	90	m Ω
	$R_{DS(on)2}$	$V_{GS}=4.5\text{V}$	$I_D=3\text{A}$		94	110	m Ω
Drain–Source Diode Forward Voltage	V_{SD}	$V_{GS}=0\text{V}$	$I_D=1\text{A}$		0.75	1.2	V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$	$I_D=250\mu\text{A}$	1.0	1.8	3.0	V
Maximum Body-Diode Continuous Current	I_S					3	A
Input Capacitance	C_{iss}	$V_{GS}=0\text{V},$ $f=1\text{MHz}$	$V_{DS}=25\text{V}$		415		pF
Output Capacitance	C_{oss}				37		
Reverse Transfer Capacitance	C_{rss}				25		
Gate resistance	R_g	$V_{GS}=0\text{V},$ $f=1\text{MHz}$	$V_{DS}=0\text{V}$		3.4		
Total Gate Charge	$Q_{g(10V)}$	$V_{GS}=10\text{V},$ $I_D=4.2\text{A}$	$V_{DS}=30\text{V}$		10		nC
Total Gate Charge	$Q_{g(4.5V)}$				5		
Gate Source Charge	Q_{gs}				2		
Gate Drain Charge	Q_{gd}				3		

/ Electrical Characteristics(Ta=25)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Turn-On Delay Time	td(on)	VGS=10V, VDS=30V RL=7Ω, RGEN=3Ω		7		ns
Turn-On Rise Time	tr			12		
Turn-Off Delay Time	td(off)			16		
Turn-Off Fall Time	tf			11		

/ Electrical Characteristic Curve



Characteristics

Fig 1: On-Region Charansfer Characteristics

Figure 2: Tra

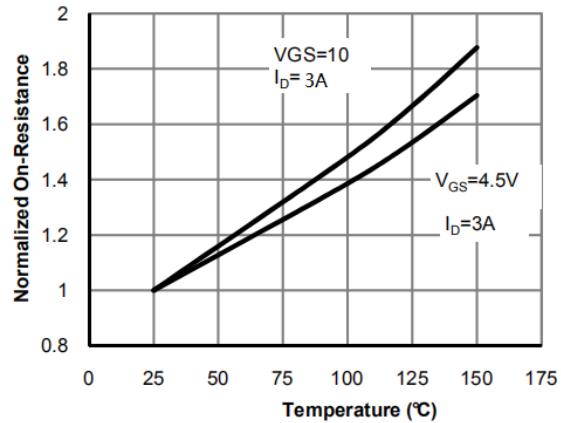
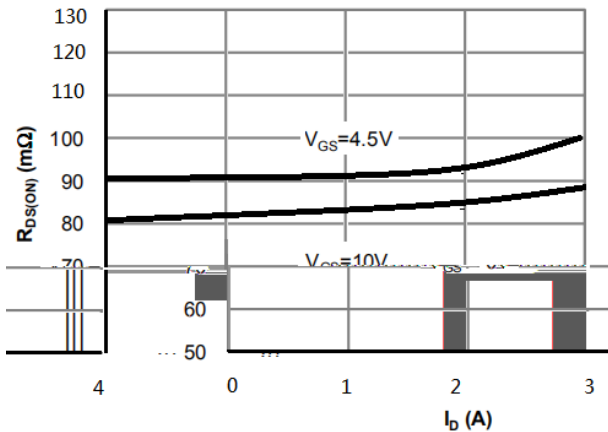


Figure 3: On-Resistance vs. Drain Current

Figure 4: On-Resistance vs. Junction Temperature

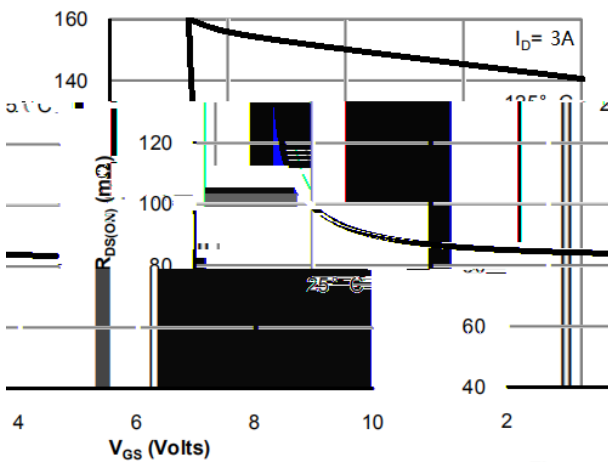


Figure 5:

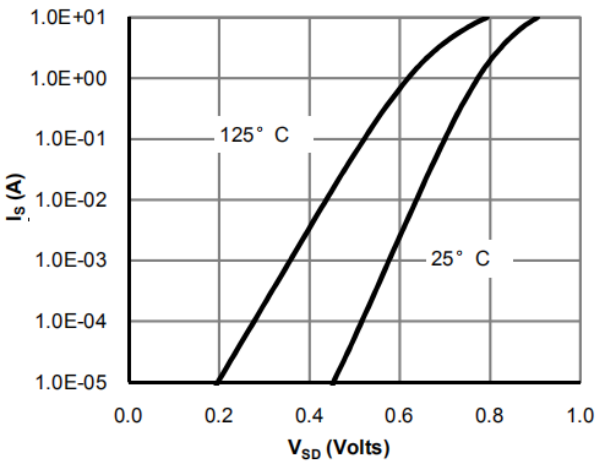


Figure 6: Body-Diode Characteristics

/ Electrical Characteristic Curve

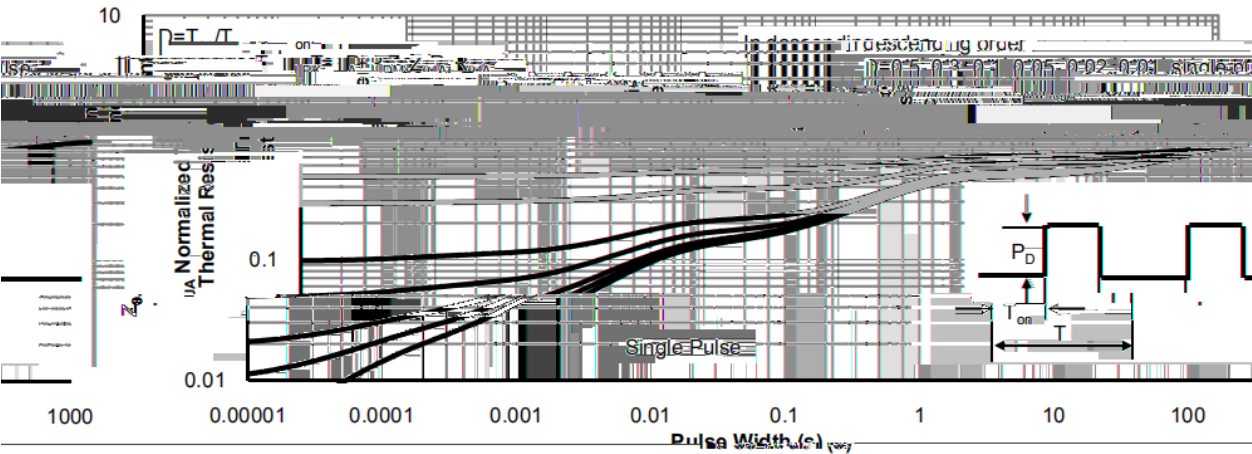
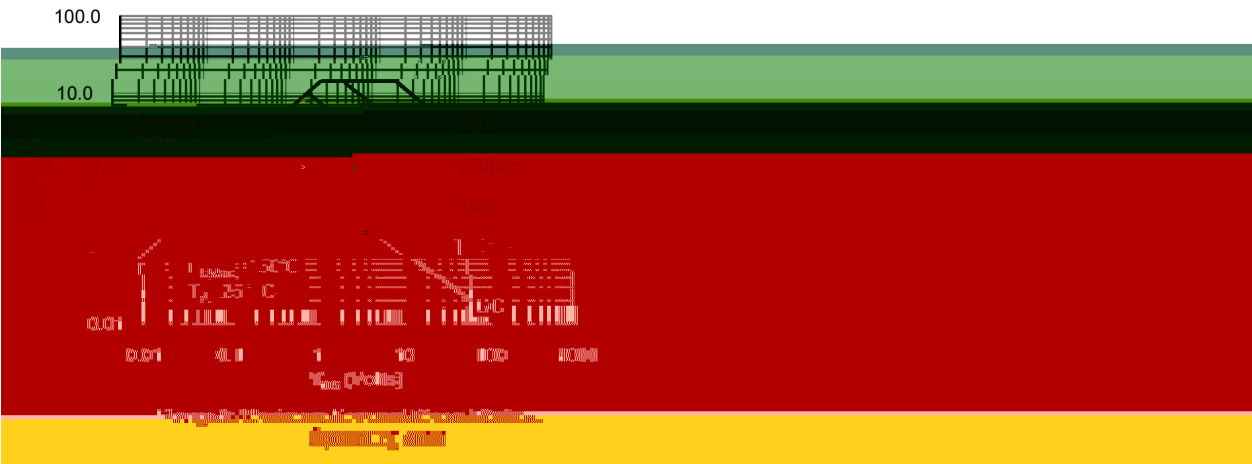
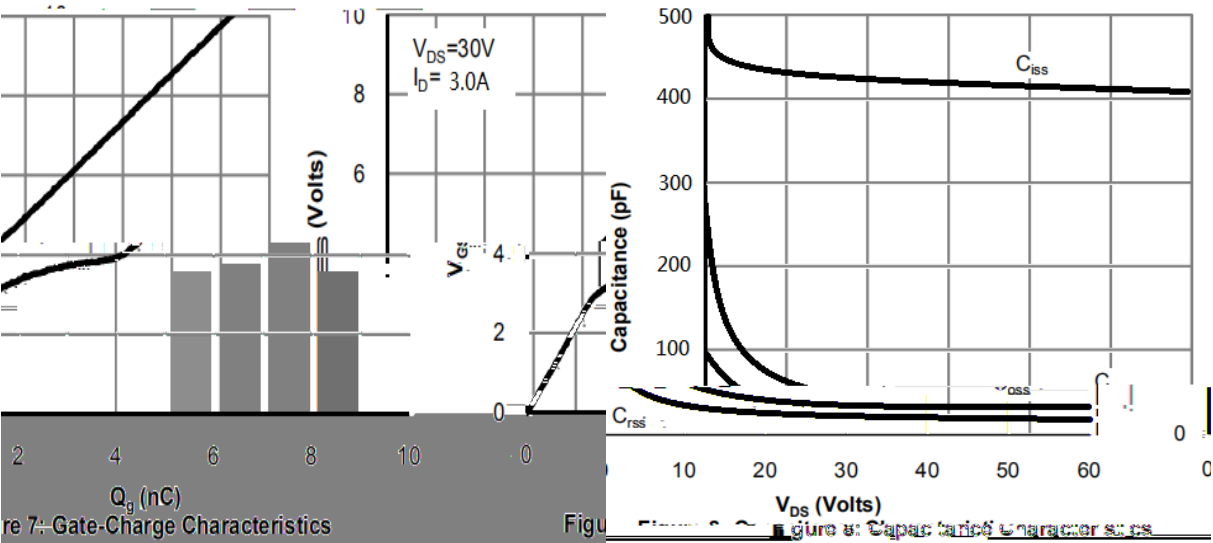
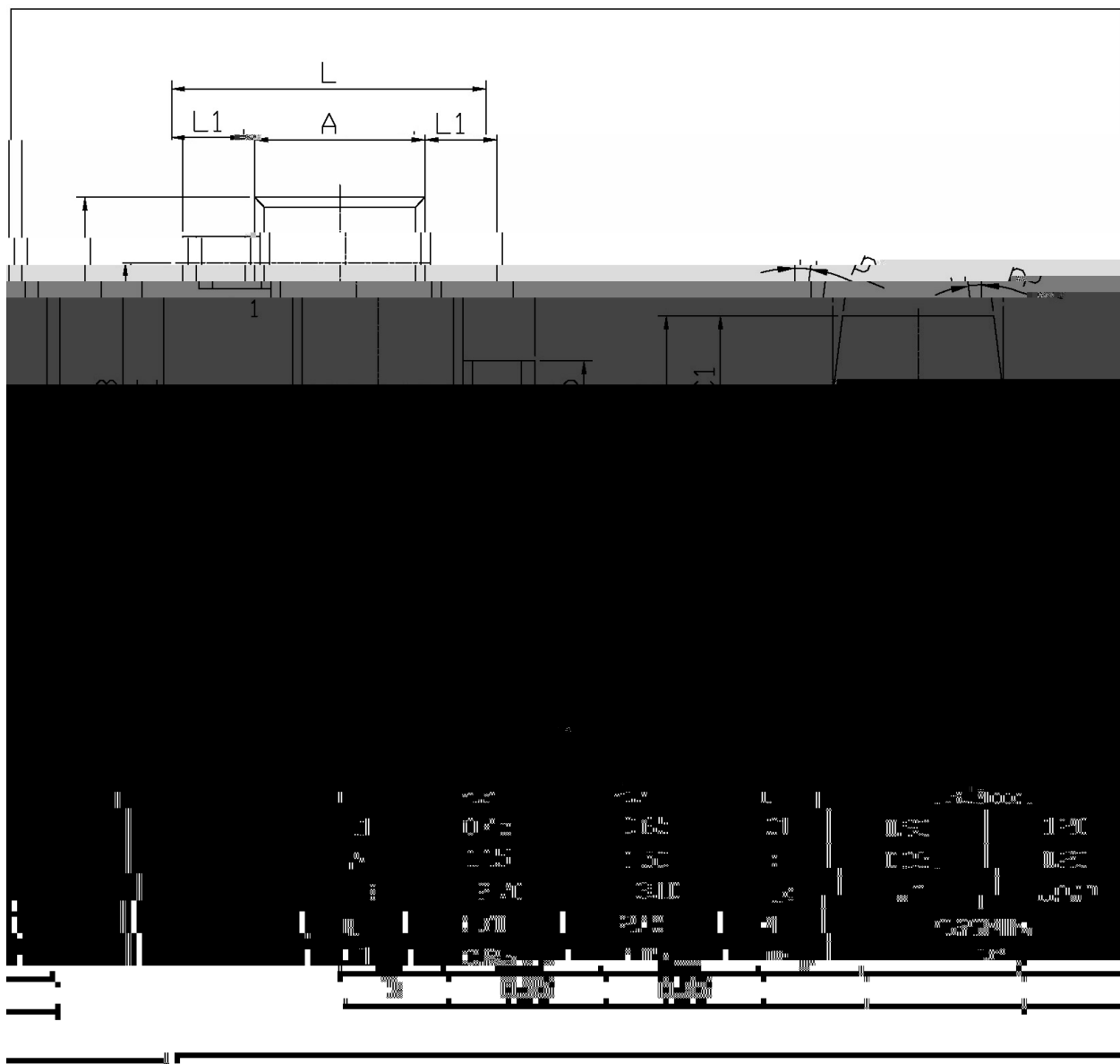


Figure 10 Normalized Maximum Transient Thermal Impedance

/ Package Dimensions

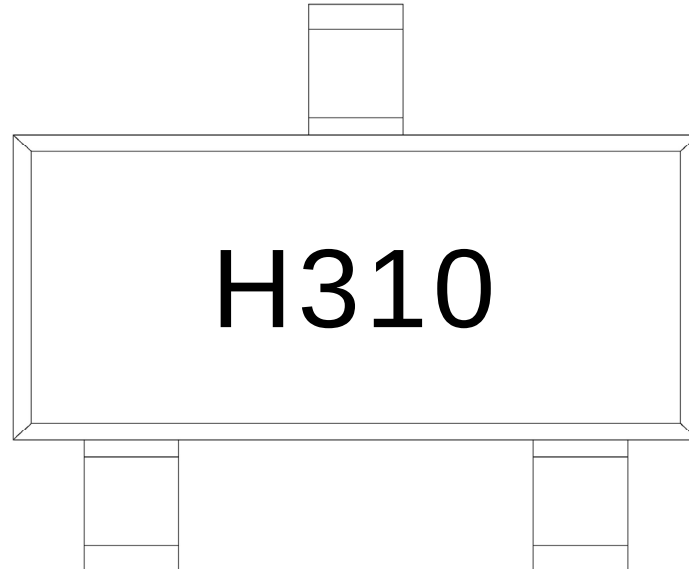
SOT-23

单位: mm





/ Marking Instructions



H:

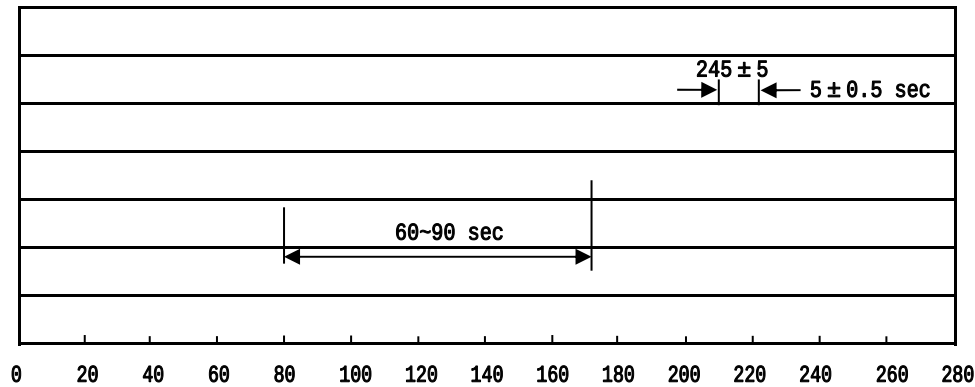
310:

Note:

H: Company Code

310 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	Units					Dimension (unit mm ³)		
SOT-23	3,000	10	30,000	6	180,000	7 ×8	180×120×180	390×385×205

/ Notices