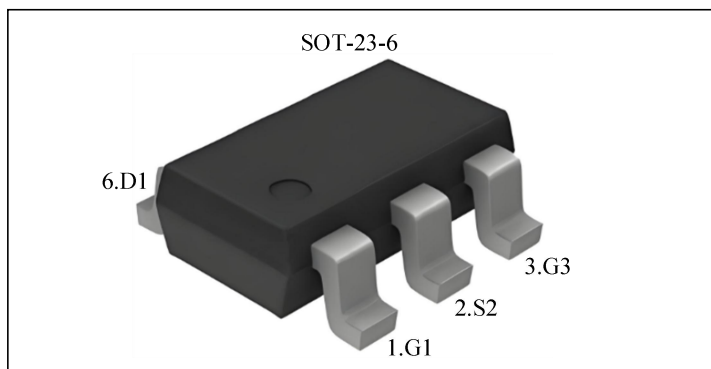


Dual N-Channel Enhancement Mode Power MOSFET

Features

- Fast Switching
- Low Gate Charge and $R_{DS(on)}$
- High power and current handling capability
- $V_{DS} = 20V, I_D = 2A$
- $R_{DS(on)} < 60m\Omega @ V_{GS} = 4.5V$



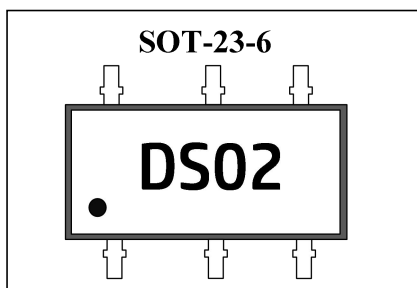
Mechanical Characteristics

- Package: SOT-23-6
- Packaging: Tape and Reel per EIA 481
- Marking : Making Code

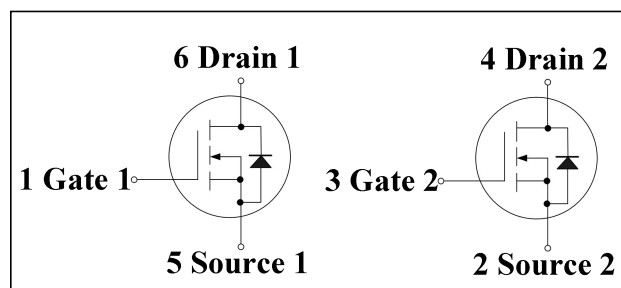
Applications

- Battery protection
- Load switch、Power management

Marking : Making Code



Schematic Diagram



Absolute Maximum Rating (Ratings at 25 °C ambient temperature unless otherwise specified.)

Parameter	Symbols	Value	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 12	V
Drain Current-Continuous	I_D	2	A
Drain Current-Pulsed ^{Note1}	I_{DM}	10	A
Junction Temperature	P_D	1	W
Maximum Power Dissipation	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Thermal Characteristics

Thermal Resistance, Junction-to-Ambient ^{Note2}	$R_{\theta JA}$	125	°C/W
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Electrical Characteristics(T_c=25°C Unless otherwise specified)

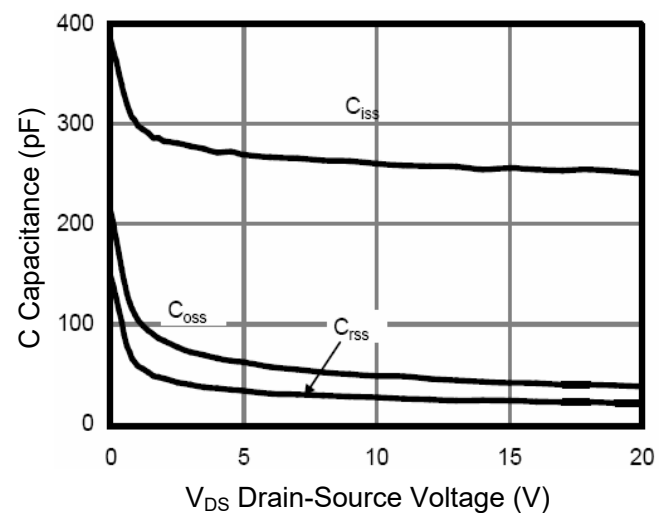
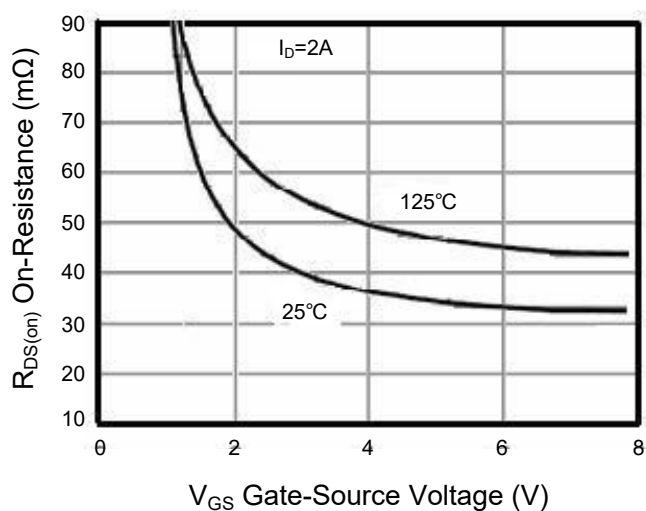
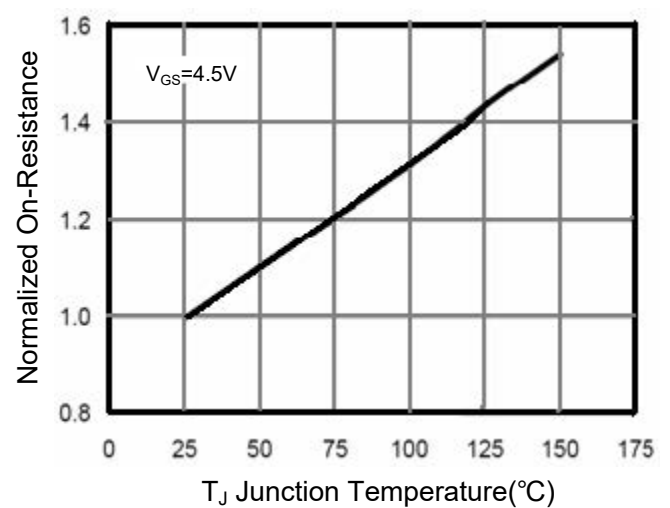
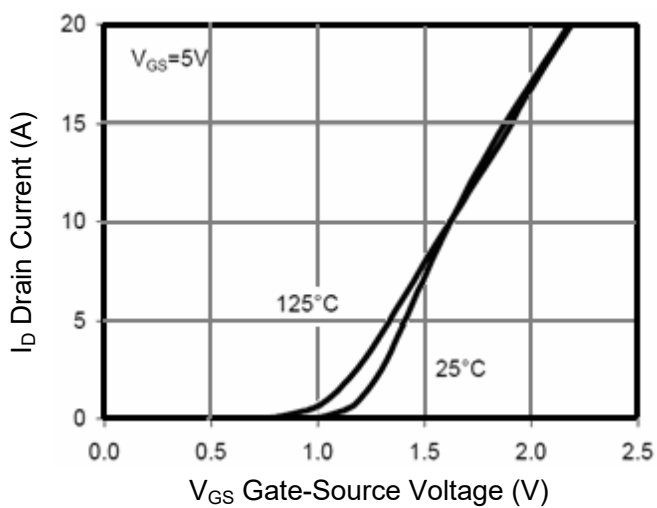
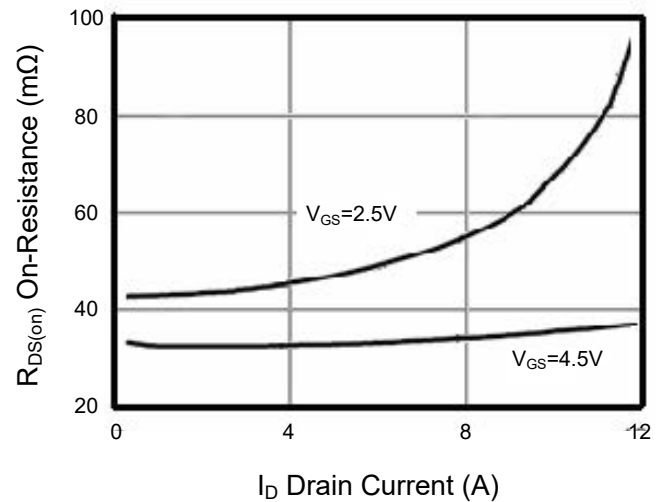
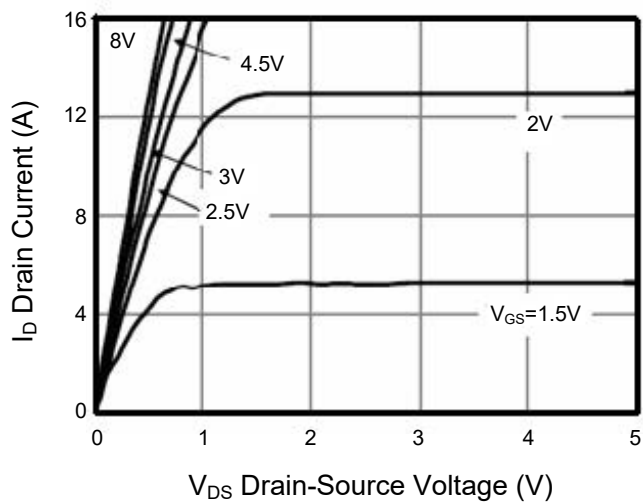
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250μA	20	--	--	V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =20V, V _{GS} =0V	--	--	1	μA
Gate-Body Leakage Current	I _{GSS}	V _{GS} =±12V, V _{DS} =0V	--	--	±100	nA
Gate Threshold Voltage ^{Note3}	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.4	0.8	1.2	V
Drain-Source On-Resistance ^{Note3}	R _{DS(on)}	V _{GS} =4.5V, I _D =2A	--	48	60	mΩ
		V _{GS} =2.5V, I _D =1A	--	60	80	mΩ
Forward Transconductance ^{Note3}	g _{FS}	V _{DS} =5V, I _D =2A	--	5	--	S
Dynamic Characteristics						
Input Capacitance	C _{iss}	V _{DS} =10V, V _{GS} =0V, f=1MHz	--	260	--	pF
Output Capacitance	C _{oss}		--	48	--	pF
Reverse Transfer Capacitance	C _{rss}		--	27	--	pF
Switching Characteristics						
Turn-on Delay Time	t _{d(on)}	V _{DD} =10V, R _L =3.3Ω, V _{GS} =4.5V, R _{GEN} =6Ω	--	2.5	--	nS
Turn-on Rise Time	t _r		--	3.2	--	nS
Turn-off Delay Time	t _{d(off)}		--	21	--	nS
Turn-off Fall Time	t _f		--	3	--	nS
Total Gate Charge	Q _g	V _{DS} =10V, I _D =2A, V _{GS} =4.5V	--	2.9	5	nC
Gate-Source Charge	Q _{gs}		--	0.4	--	nC
Gate-Drain Charge	Q _{gd}		--	0.6	--	nC
Source-Drain Diode Characteristics						
Diode Forward Voltage ^{Note3}	V _{SD}	V _{GS} =0V, I _S =2A	--	--	1.2	V
Diode Forward Current ^{Note2}	I _S		--	--	2	A

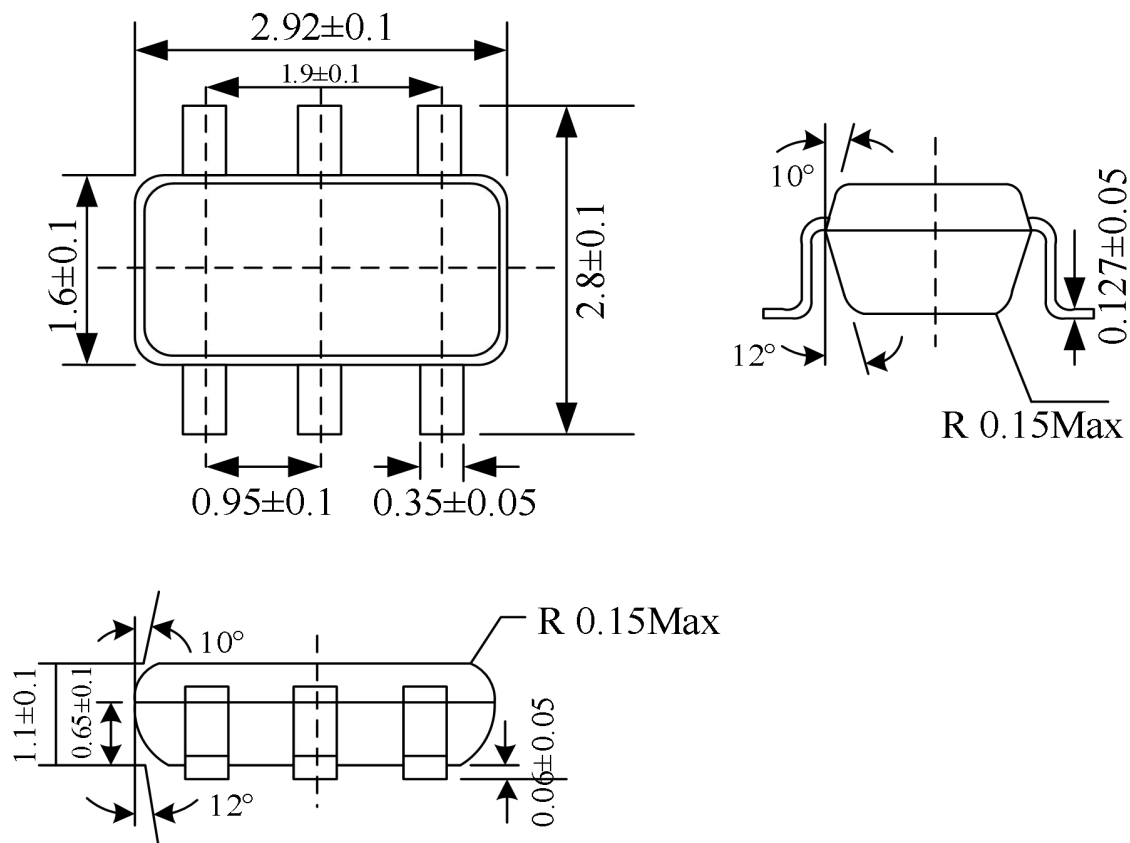
Note: 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2. Surface Mounted on FR4 Board, t ≤ 10 sec.

3. Pulse Test: Pulse width ≤ 300μs, duty cycle ≤ 2%.

Typical Characteristic Curves

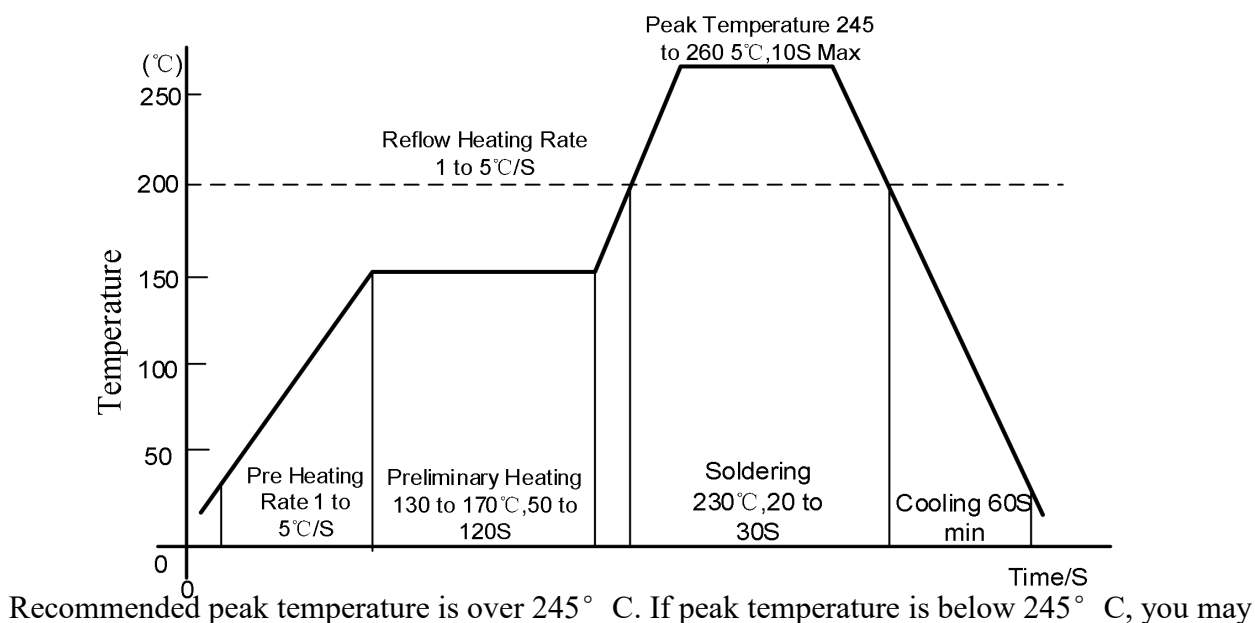


Outline Drawing – SOT-23-6(Dimensions in mm)**Package Information**

Package Type	Description	Quantity (pcs)	Standard
SOT-23-6	Reel -7 inches	3000	EIA-481

Conditions of Soldering and Storage

- Recommended condition of reflow soldering



adjust the following parameters:

- | |
|--|
| • Time length of peak temperature (longer) |
| • Time length of soldering (longer) |
| • Thickness of solder paste (thicker) |

• **Conditions of hand soldering**

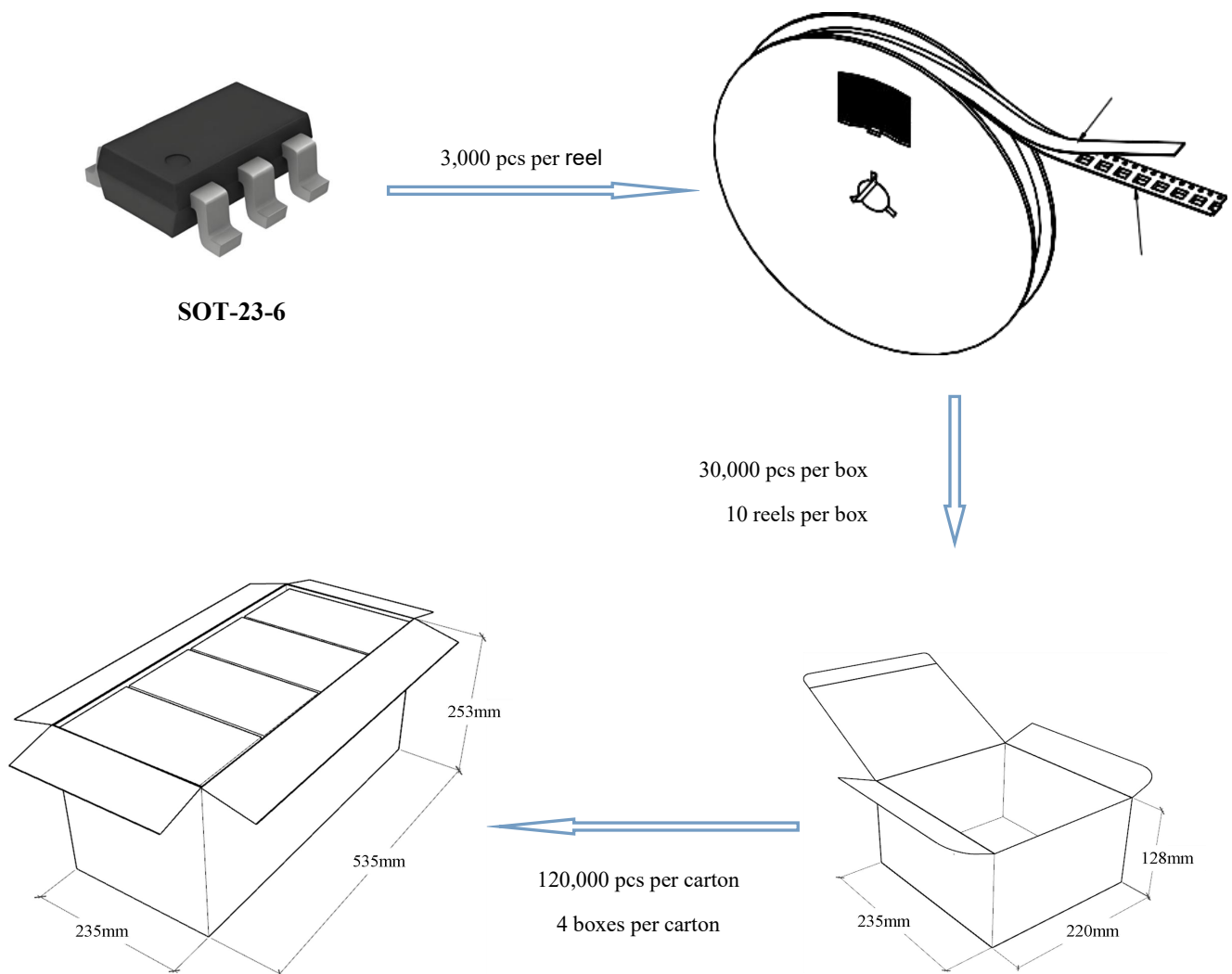
- | |
|----------------------|
| • Temperature: 300°C |
| • Time: 3s max |
| • Times: one time |

• **Storage conditions**

- | |
|--|
| • Temperature: 5 to 40° C |
| • Humidity: 30 to 80% RH |
| • Recommended period: One year after manufacturing |

Package Specifications

• **The method of packaging**



Symbol	Value(unit:mm)
A	Ø 177.8±1
B	2.7±0.2
C	Ø 13.5±0.2
E	Ø 54.5±0.2
F	12.3±0.3
D	9.6+2/-0.3
T1	1.0±0.2
T2	1.2±0.2

