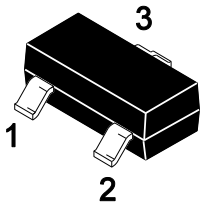
PJM2319PSA
P-Enhancement Field Effect Transistor

Features

- Fast Switching
- Ultra Low Qgd
- $R_{DS(on)}$ ≤80 mΩ @V_{GS}= -10V

SOT-23



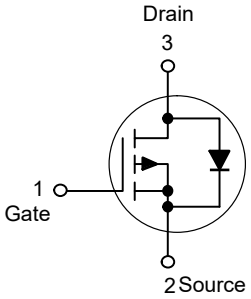
1. Gate 2.Source 3.Drain

Marking: S19

Application

- Load Switch
- DC/DC Converter

Schematic Diagram



Absolute Maximum Ratings

Ratings at T_A=25°C unless otherwise specified.

Parameter		Symbol	Value	Unit
Drain-Source Voltage		$-V_{DS}$	40	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current	T_C = 25°C	$-I_D$	4.4	A
	T_A = 25°C		3.1	
Pulsed Drain Current Note 1		$-I_{DM}$	20	A
Total Power Dissipation		P_D	1.25	W
Operating Junction Temperature		T_J	150	°C
Storage Temperature		T_{STG}	- 55 to + 150	°C

Thermal Characteristics

Parameter	Symbol	Value	Units
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	100	°C/W

Electrical Characteristics

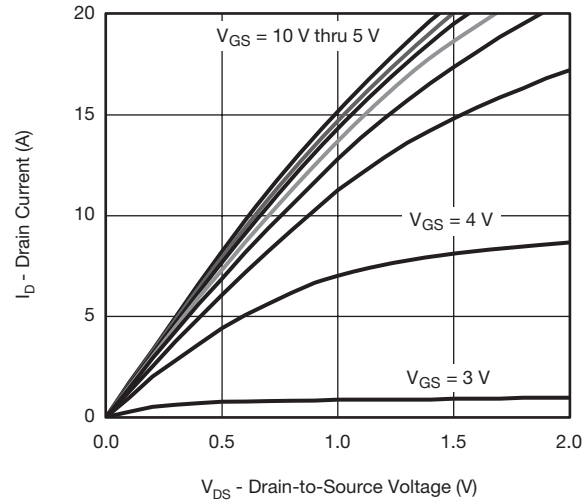
Ratings at T_J = 25°C unless otherwise specified.

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-to-Source Breakdown Voltage	$-BV_{DSS}$	V_{GS} = 0 V, I_D = -250uA	40	-	-	V
Zero Gate Voltage Drain Current	$-I_{DSS}$	V_{DS} =-40 V, V_{GS} = 0V	-	-	1	uA
Gate-to-Source Leakage Current	I_{GSS}	V_{DS} = 0 V, V_{GS} = ±20V	-	-	±100	nA
Gate Threshold Voltage Note2	$-V_{GS(th)}$	V_{GS} = V_{DS}, I_D = -250uA	1	-	3	V
Drain-to-Source On-Resistance Note2	$R_{DS(on)}$	V_{GS} = -10V, I_D = -3.1A	-	66	80	mΩ
		V_{GS} = -4.5V, I_D = -2.6A	-	90	120	
Forward Transconductance Note2	g_{FS}	V_{DS} = -15 V, I_D = -3.1A	-	10	-	S
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{GS} = 0 V, f = 1.0 MHz, V_{DS} = -20 V	-	595	-	pF
Output Capacitance	C_{oss}		-	76	-	
Reverse Transfer Capacitance	C_{rss}		-	61	-	
Total Gate Charge	Q_g	V_{DS} =-20V, V_{GS} =-4.5V, I_D = -3.1A	-	7	11	nC
Gate-Source Charge	Q_{gs}		-	2.5	-	
Gate-Drain Charge	Q_{gd}		-	3.2	-	
Turn-On Delay Time	$t_{d(on)}$	V_{DS} =-20V, I_D=-2.5A, V_{GEN} =-10V, R_L =8Ω,	-	8	16	ns
Turn-On Rise Time	t_r		-	9	18	
Turn-Off Delay Time	$t_{d(off)}$		-	20	30	
Turn-Off Fall Time	t_f		-	8	16	
Source-Drain Diode Characteristics						
Body Diode Voltage	$-V_{SD}$	I_S=-2.5A, V_{GS}=0V		0.8	1.5	V
Continuous Source-Drain Diode Current	$-I_S$		--	--	1	A

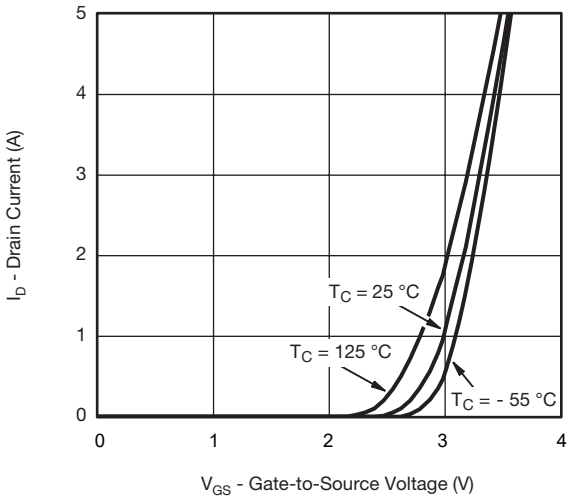
Notes:

1. Repetitive Rating: Pulse width limited by maximum junction temperature.
2. Pulse Test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.

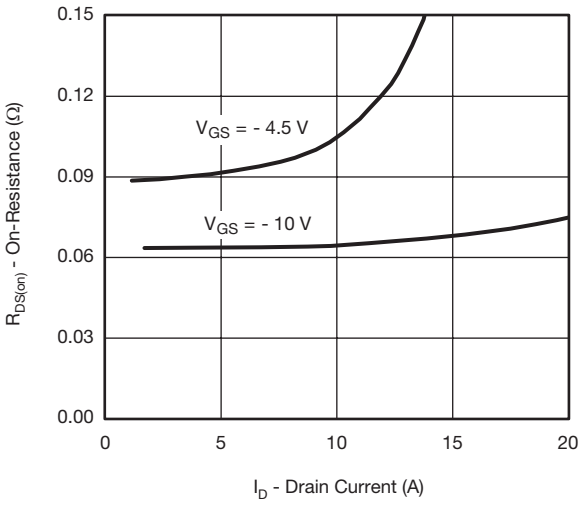
Ratings and Characteristic Curves



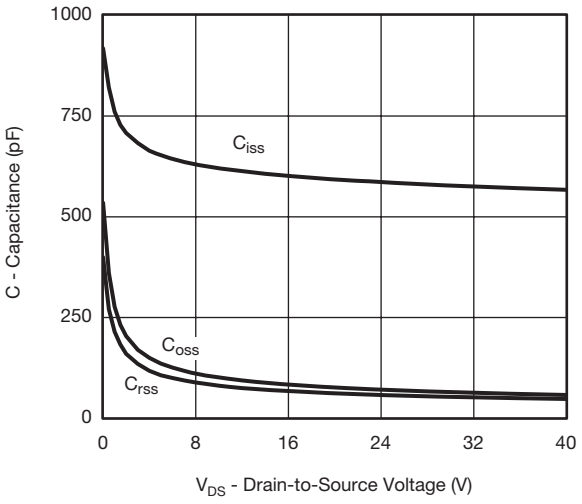
Output Characteristics



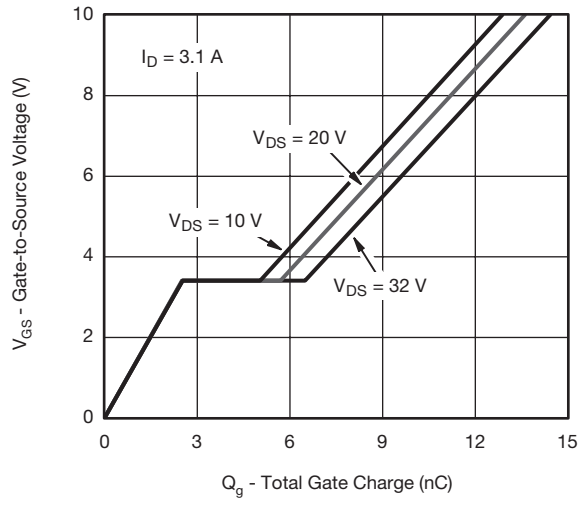
Transfer Characteristics



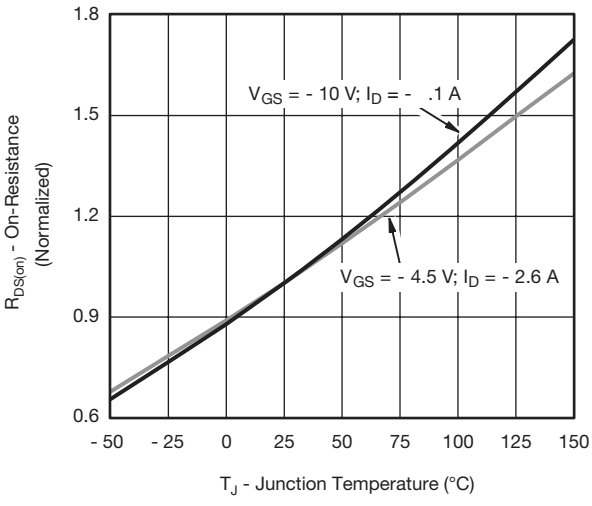
On-Resistance vs. Drain Current



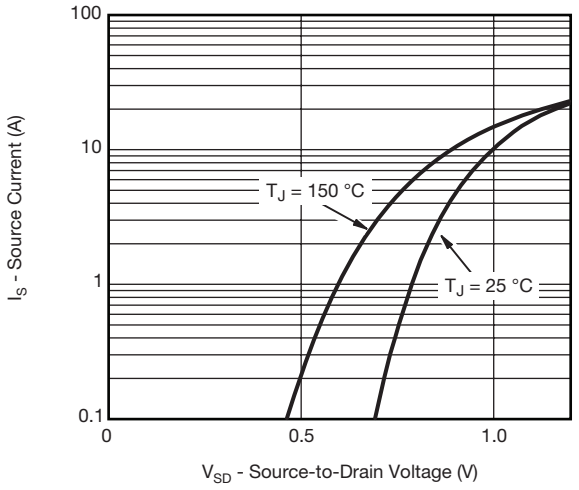
Capacitance



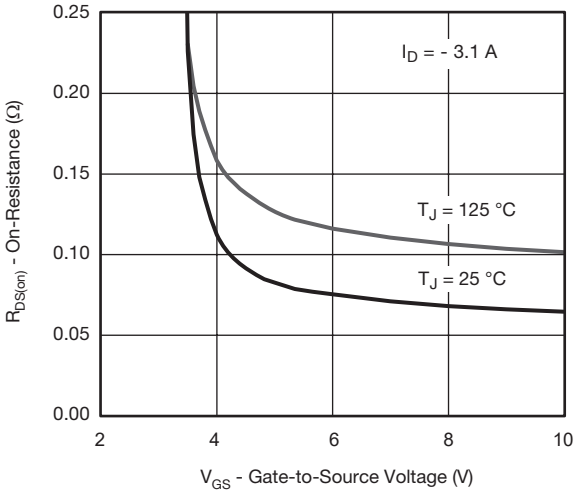
Gate Charge



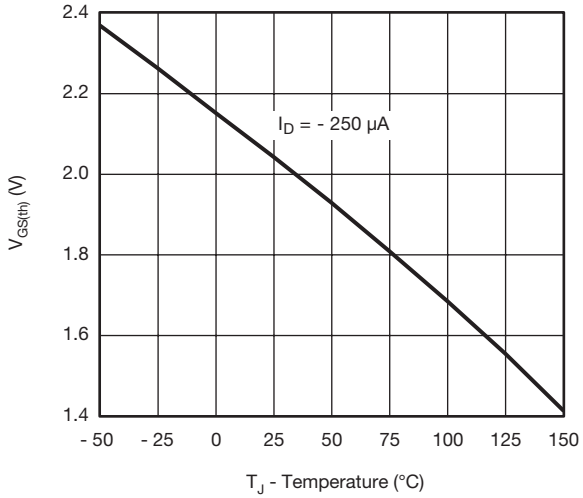
On-Resistance vs. Junction Temperature



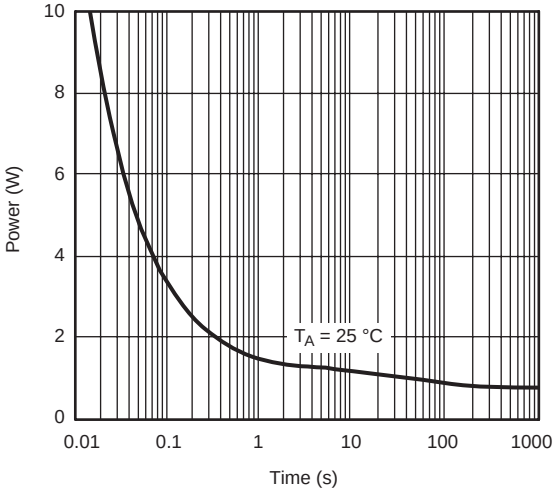
Source-Drain Diode Forward Voltage



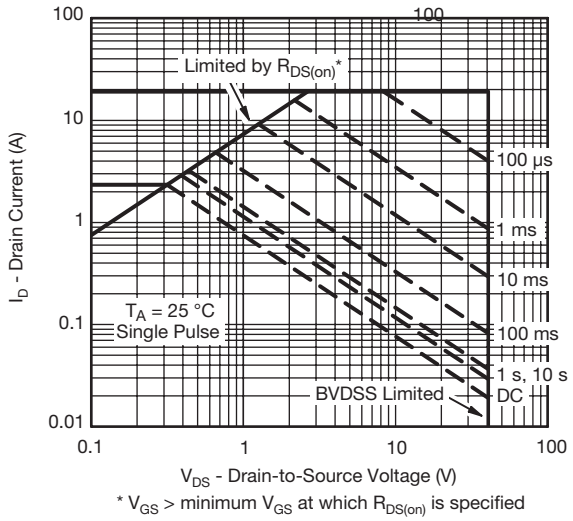
On-Resistance vs. Gate-to-Source Voltage



Threshold Voltage

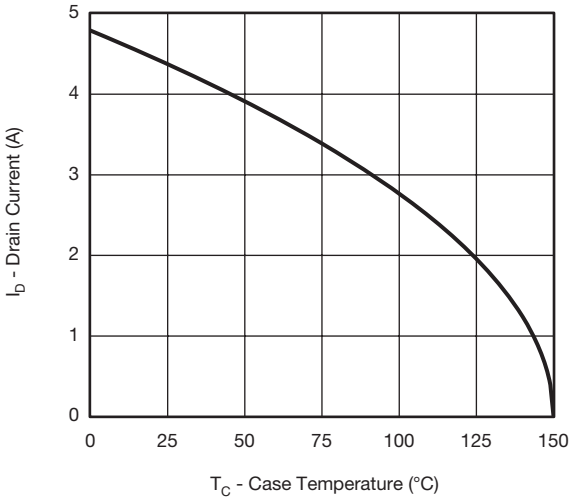


Single Pulse Power (Junction-to-Ambient)

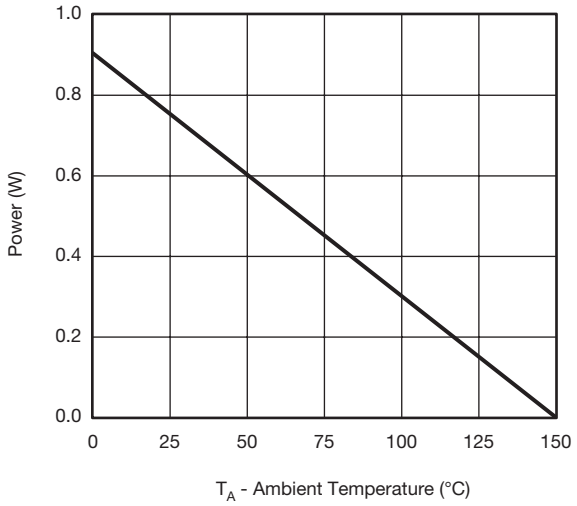


* V_{GS} > minimum V_{GS} at which $R_{DS(on)}$ is specified

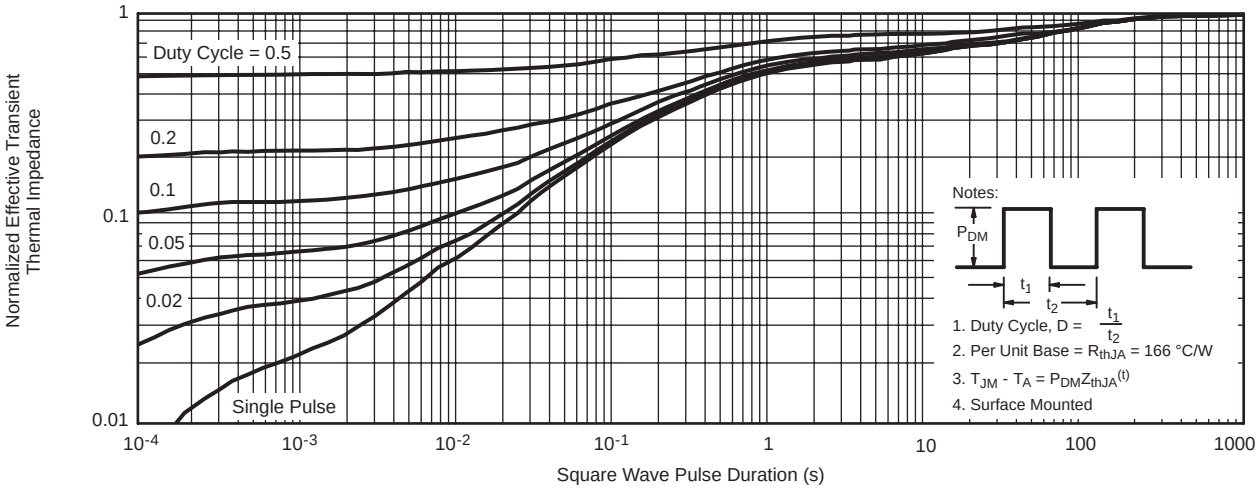
Safe Operating Area, Junction-to-Ambient



Current Derating*



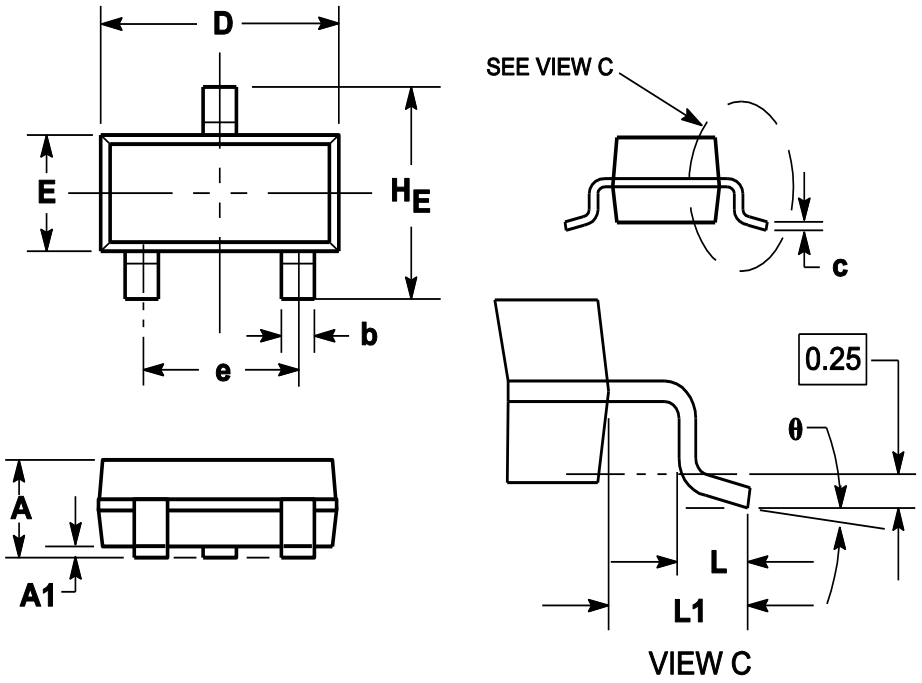
Power (stead-state), Junction-to-Ambient



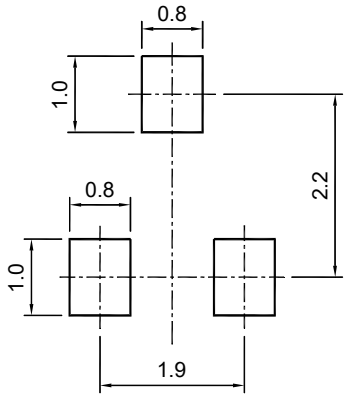
Normalized Thermal Transient Impedance, Junction-to-Ambient

Package Outline

SOT-23（TO-236)



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.900	1.025	1.150
A1	0.000	0.050	0.100
b	0.300	0.400	0.500
c	0.080	0.115	0.150
D	2.800	2.900	3.000
E	1.200	1.300	1.400
HE	2.250	2.400	2.550
e	1.800	1.900	2.000
L1	0.550REF		
L	0.300		0.500
θ	0°		8°



SOT-23 (TO-236)

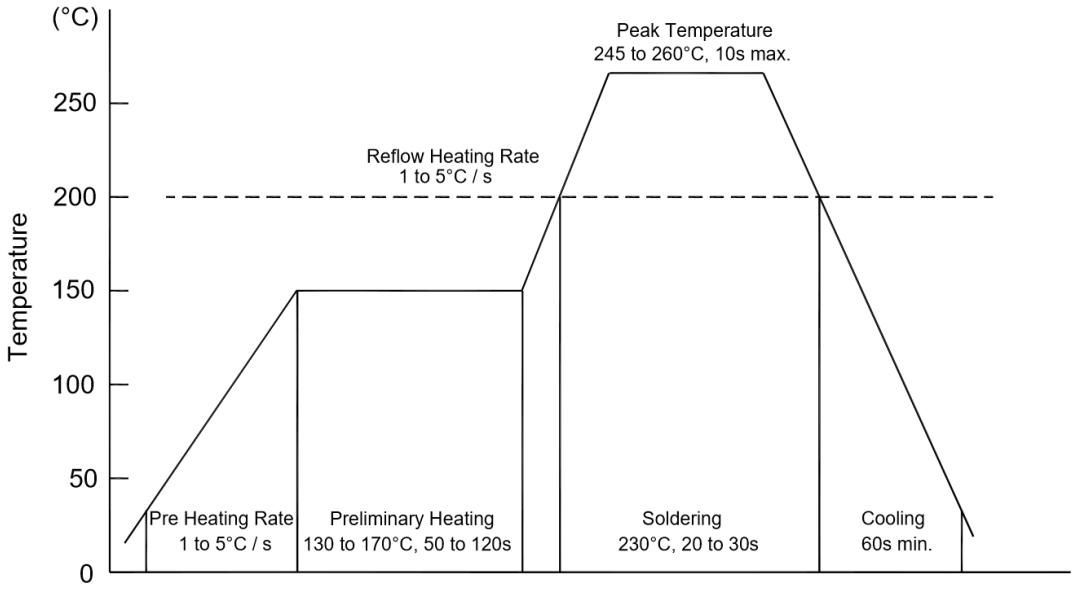
Recommended Soldering Pad

Ordering Information

Device	Package	Shipping
PJM2319PSA	SOT-23	3,000PCS/T&R (7 inch)

Conditions of Soldering And Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 ℃. If peak temperature is below 245 ℃, you may 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: 370 ℃
- Time: 3s max.
- Times: one time

◆ Storage conditions

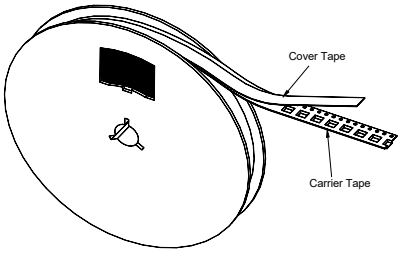
- **Temperature**
  5 to 40 ℃
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing

Package Specifications

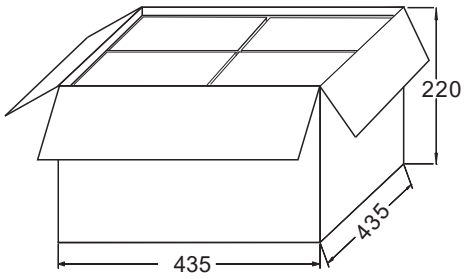
◆ The method of packaging

SOT-23 (TO-236)

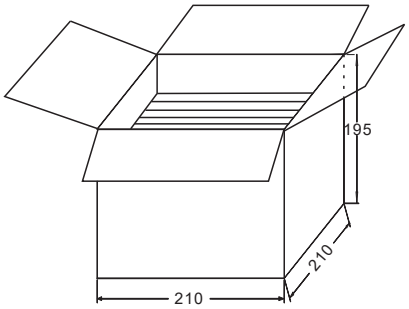
3,000 pcs per reel



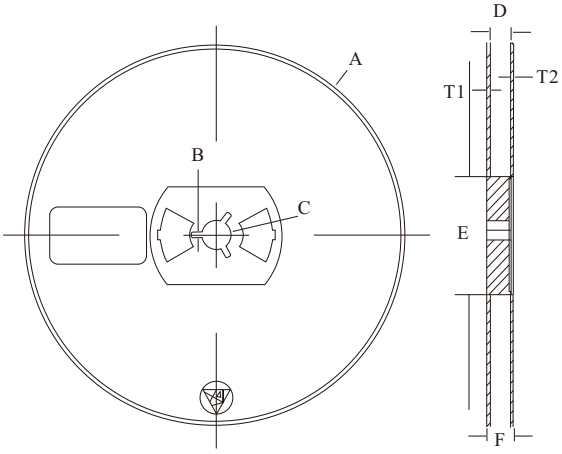
30,000 pcs per box
10 reels per box



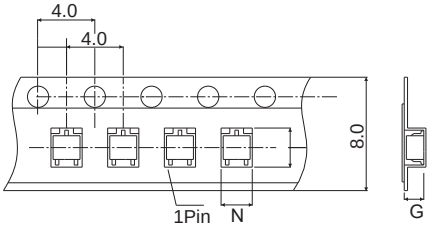
120,000 pcs per carton
4 boxes per carton



◆ Embossed tape and reel data



Reel (7")



Tape (8mm)

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
N	3.15±0.1
G	1.25±0.1

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