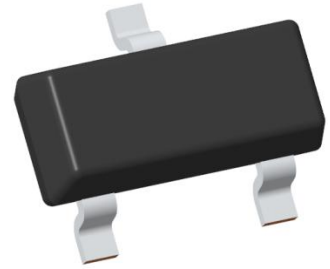


General Description

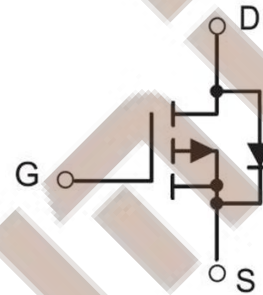


V _{DSS}	R _{DS(on) MAX}	I _D Max.
-30V	45mΩ@-10V	-4.1A
	60mΩ@-4.5V	



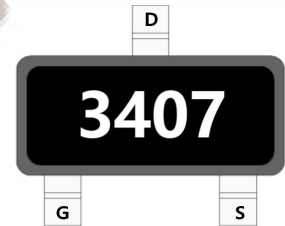
Features

- High dense cell design for extremely low RDS(on).
- Exceptional on-resistance and maximum DC current capability.
- Load/Power Switching.
- Interfacing Switching



Mechanical Data

- SOT-23 Small Outline Plastic Package.
- Epoxy UL: 94V-0.
- Mounting Position: Any.



Package Marking and Ordering Information

Product ID	Pack	Marking	Qty(PCS)
3407	SOT-23	3407	3000

Absolute Maximum Ratings (Ta=25℃ unless otherwise noted)

Parameter	Symbols	Rating	Units
Drain-Source Voltage	V _{DS}	-30	V
Gate-Source Voltage	V _{GS}	±20	V
Continuous Drain Current	I _D	-4.1	A
Power Dissipation	P _D	1.3	W
Junction Temperature	T _j	150	℃
Storage Temperature	T _{stg}	-55-+150	℃
Thermal Resistance From Junction to Ambient (2)	R _{θJA}	96.2	℃/W

Electrical Characteristics (T_J=25°C, unless otherwise noted)

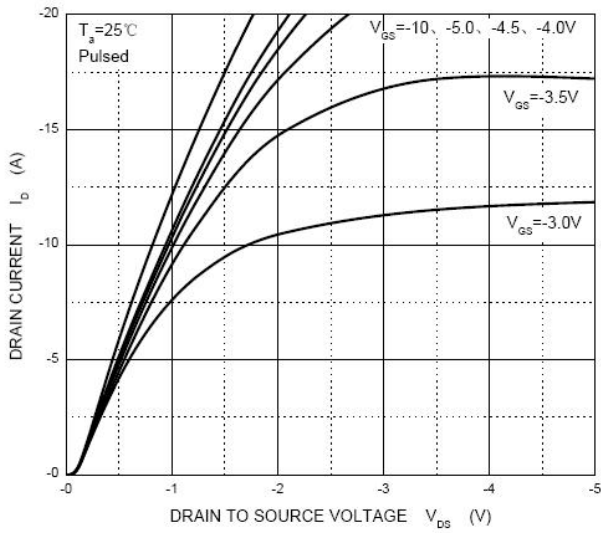
Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Off characteristics						
Drain-Source Breakdown Voltage	V(BR)DSS	VGS=0V, ID=-250uA	-30			V
Zero Gate Voltage Drain current	IDSS	VDS=-24V, VGS=0V			-1	uA
Gate-body Leakage	IGSS	VGS=±20V, VDS=0V			±100	nA
On characteristics						
Drain-Source On-Resistance (3)	RDS(ON)	VGS=-10V, ID=-4.1A		39	45	mΩ
		VGS=-4.5V, ID=-3A		53	60	
Gate-Threshold voltage*	V GS (th)	VDS=VGS, ID=-250uA	-1.0	-1.5	-2.0	V
Dynamic characteristics						
Input capacitance	Ciss	VDS=-15V, VGS=0V,f=1MHz		700		pF
Output capacitance	Coss			120		
Reverse Transfer capacitance	Crss			75		
Switching characteristics						
Turn-on Time	td(on)	VGS=-10V, VDS=-15V, RL=3.6Ω, RGEN=3Ω		8.6		ns
Rise time	tr			5.0		
Turn-off Time	td(off)			28.2		
Fall time	tf			13.5		
Drain-source diode characteristics and maximum ratings						
Diode forward voltage	VSD	IS=-1A, VGS=0V			-1.0	V

Notes :

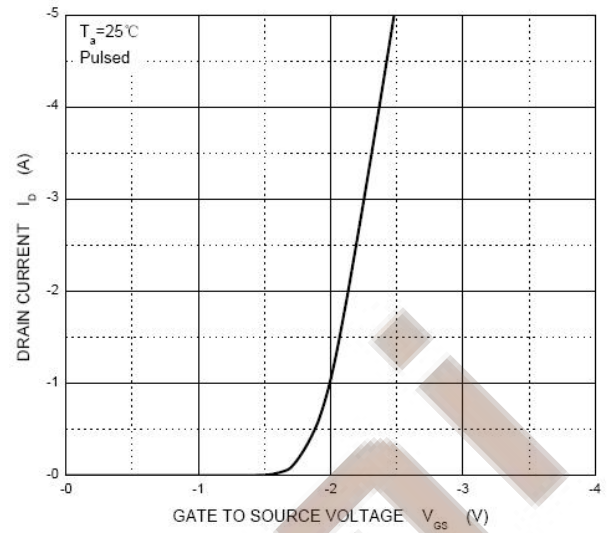
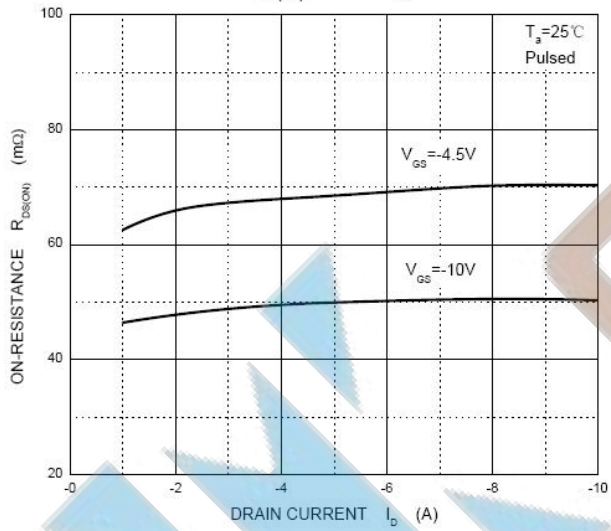
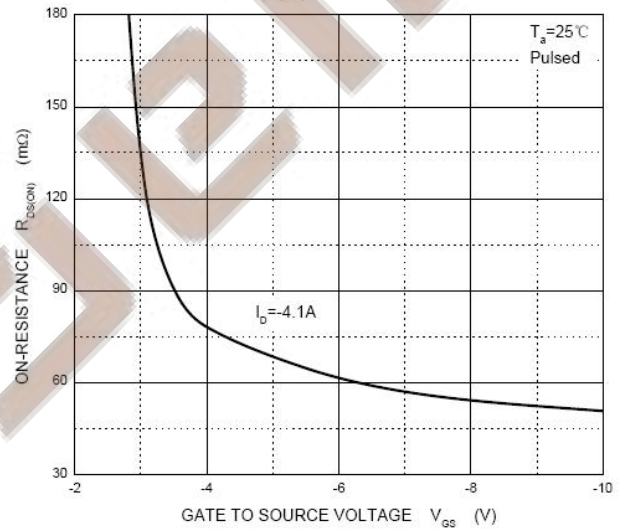
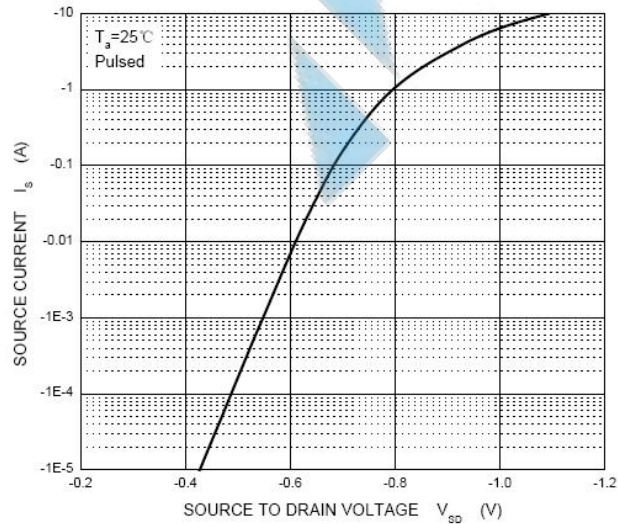
1. Repetitive Rating; Pulse Width Limited by Maximum Junction Temperature.
2. RθJA is measured with the device mounted on a 1inch2 pad of 2oz copper FR4 PCB
3. Pulse Test: Pulse Width ≤300us, Duty Cycle≤0.5%.

Typical Characteristics

Output Characteristics

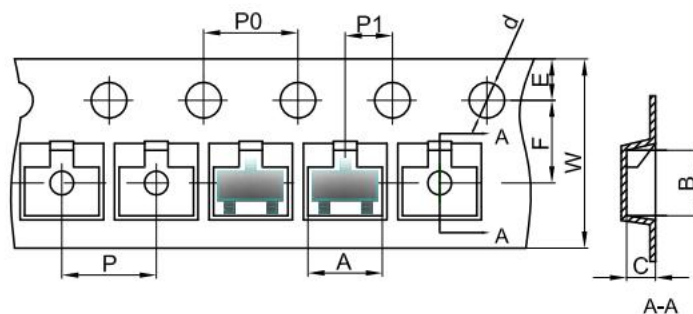


Transfer Characteristics


 $R_{DS(ON)}$ — I_D

 $R_{DS(ON)}$ — V_{GS}

 I_S — V_{SD}


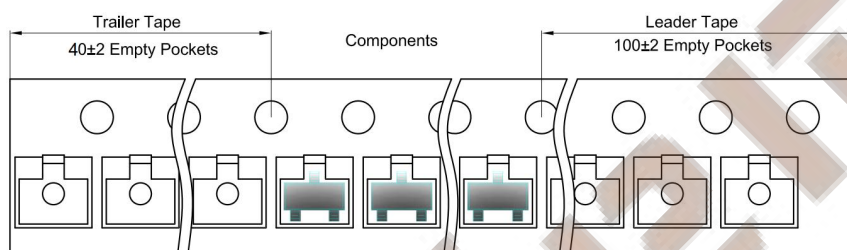
Package Information

Carrier Dimension(mm)

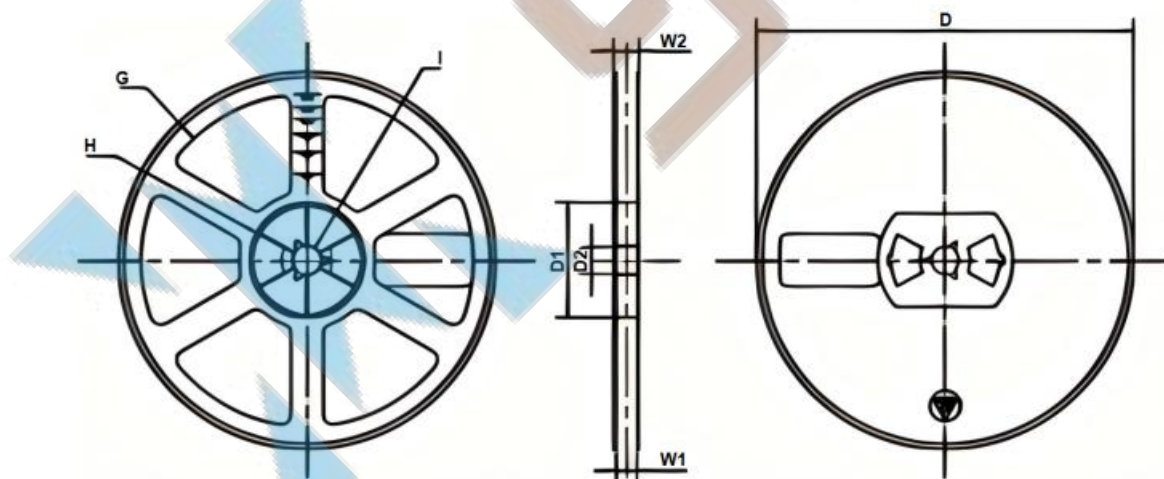


Dimensions are in millimeter

Pkg Type	A	B	C	d	E	F	P0	P	P1	10*P0	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	40.00	8.00
(Tolerance)	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.2	±0.1



Reel Dimension(mm)



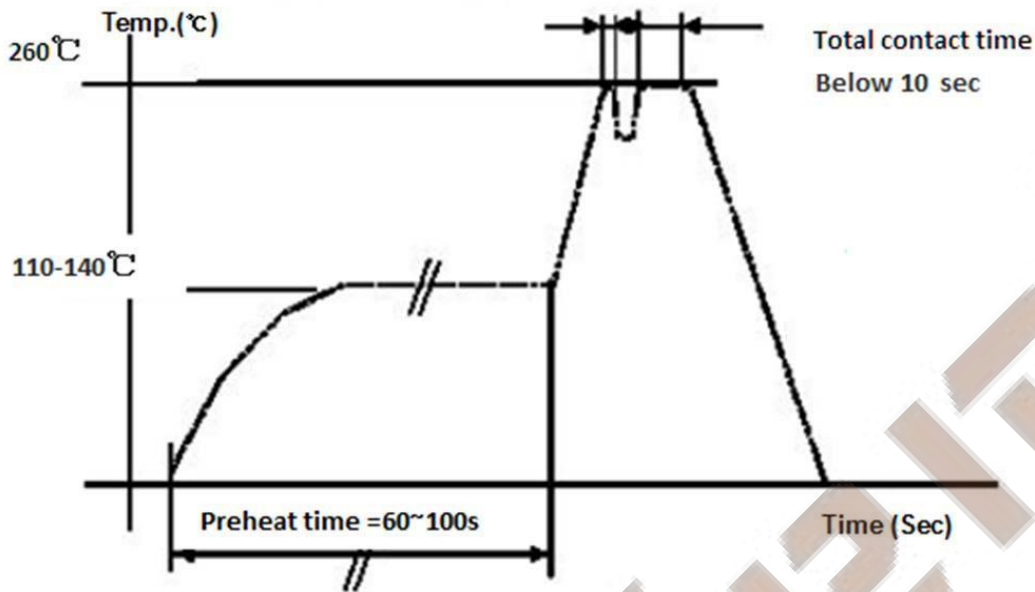
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Φ178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30
Tolerance	±2	±1	±1	±1	±1	±1	±1	±1

Package Specifications

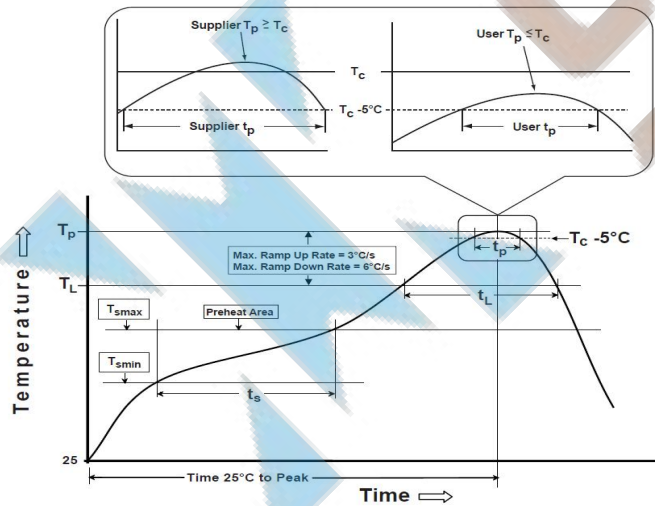
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SOT23	7'	178	3	210*208*203	45	440*400*230	180

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020

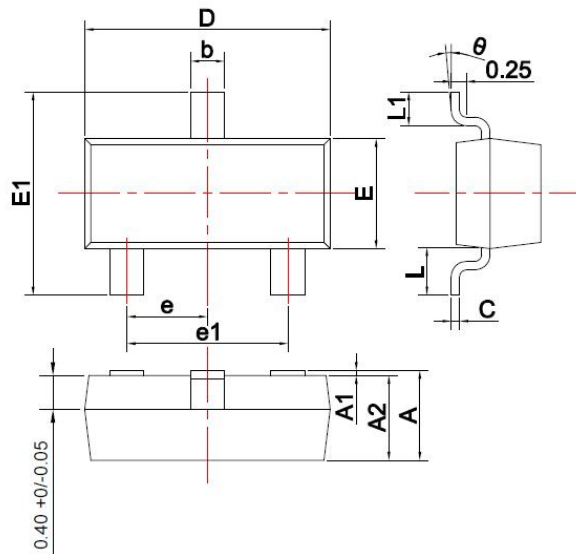


Preheat/Soak Temperature Min (Tsmin) Temperature Max (Tsmax) Time (ts) from (Tsmin to Tsmax)	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217°C
Ramp-up Rate to 217°C(Melting Point of Solder)	3°C/sec
Time at Temp.>217°C (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5°C
Time within 5°Cbelow Peak Temp.	20~40 Sec
Cooling Rate	6°C/sec (max)
Time from 25°C to Peak Temp.	8min (max)

c) Manual Soldering

When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

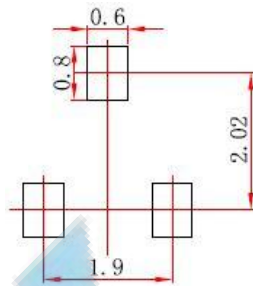
Package Mechanical Data



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

Unit: mm

Suggested Pad Layout



Note:

1. Controlling dimension: In millimeters.
2. General tolerance: ± 0.05 mm.
3. The pad layout is for reference purposes only.

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