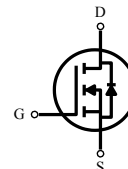
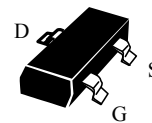


PRIMARY CHARACTERISTICS		
V _{DSS} (V)	I _D (A)	R _{DS(on)} (m-ohm) Max
20	5.8	28@V _{GS} =4.5V
	4.6	42@V _{GS} =2.5V

SOT-23

PACKAGE

- Body Marking Example
Marking :2300



FEATURES

- uper high dense cell trench design for low RDS(on).
- Rugged and reliable.
- urface Mount package.

MECHANICAL DATA

- Case : Molded plastic,SOT-23
- Polarity : Indicated by cathode band
- Terminals :Plated terminals, solderable per MIL-STD-750,Method 2026
- Epoxy : UL94-V0 rated flame retardant

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	± 12	V
Drain Current-Continuous ^(NOTE 1) @ T _A = 25 °C -Pulse ^(NOTE 2)	I _D	5.8	A
	I _{DM}	24	A
Drain-Source Diode Forward Current ^(NOTE 1)	I _S	1.7	A
Maximum Power Dissipation ^(NOTE 1)	P _D	T _A =25°C 1.25	W
		T _A =75°C 0.75	
Operating Junction and Storage Temperature Range	T _J ,T _{STG}	- 55 to 150	°C

THERMAL CHARACTERISTICS

Thermal Resistance,Junction-to-Ambient ^(NOTE 1)	R _{thJA}	100	°C/W
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Note

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

2. Pulse width limited by maximum junction temperature.

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ ^(NOTE 3)	Max	Unit
OFF CHARACTERISTICS						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} = 0V , I _D = 250uA	20			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 20V , V _{GS} = 0V			1	uA
Gate-Body Leakage	I _{GSS}	V _{GS} = 12V , V _{DS} = 0V			100	nA
ON CHARACTERISTICS ^(NOTE 2)						
Gate Threshold Voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250uA	0.6	0.83	1.5	V
Drain-Source On-State Resistance	R _{DS(on)}	V _{GS} = 4.5V , I _D = 5.8A		24	28	m-ohm
		V _{GS} = 2.5V , I _D = 4.6A		32	42	
DRAIN-SOURCE DIODE CHARACTERISTICS ^(NOTE 2)						
Diode Forward Voltage	V _{SD}	V _{GS} = 0V , I _S = 1.7A			1.2	V
DYNAMIC CHARACTERISTICS ^(NOTE 3)						
Input Capacitance	C _{ISS}	V _{DS} = 8V , V _{GS} = 0V f = 1.0MHz		512		pF
Output Capacitance	C _{OSS}			130		pF
Reverse Transfer Capacitance	C _{RSS}			105		pF
SWITCHING CHARACTERISTICS ^(NOTE 3)						
Turn-On Delay Time	t _{D(ON)}	V _{DD} = 10V , I _D = 3A V _{GEN} = 4.5V R _L = 3.3 ohm R _{GEN} = 6 ohm		9.8		ns
Rise Time	t _r			3.8		ns
Turn-Off Delay Time	t _{D(OFF)}			21		ns
Fall Time	t _f			5.2		ns
Total Gate Charge	Q _g	V _{DS} = 10V , I _D = 3A V _{GS} = 4.5V		5.7		nC
Gate-Source Charge	Q _{gs}			1.6		nC
Gate-Drain Charge	Q _{gd}			1.3		nC

Note

2. Pulse Test Pulse width ≤ 300us , Duty Cycle ≤ 2% .

3. Guaranteed by design , not subject to production testing .

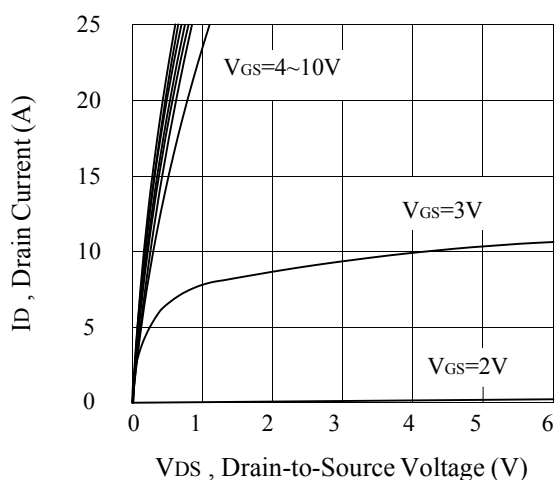


Figure 1. Output Characteristics

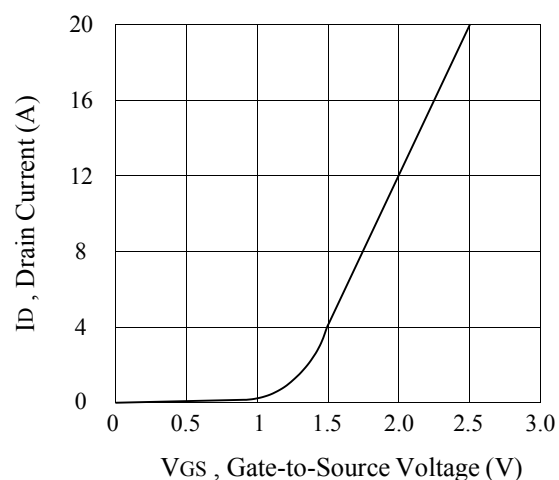


Figure 2. Transfer Characteristics

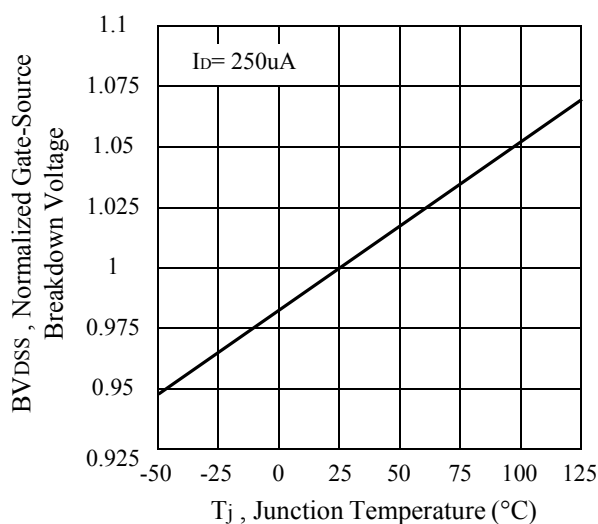


Figure 3. Breakdown Voltage Variation with Temperature

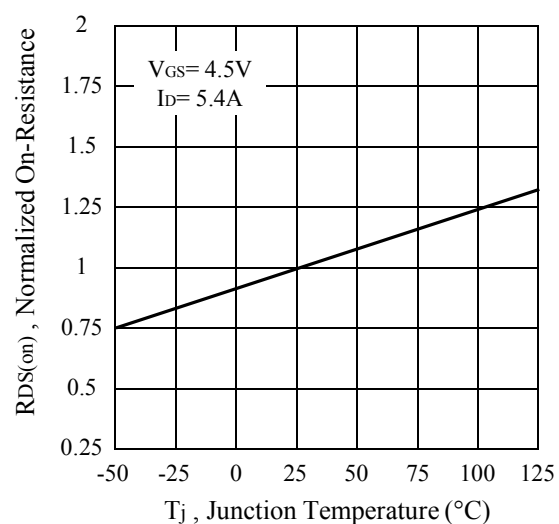


Figure 4. On-Resistance Variation with Temperature

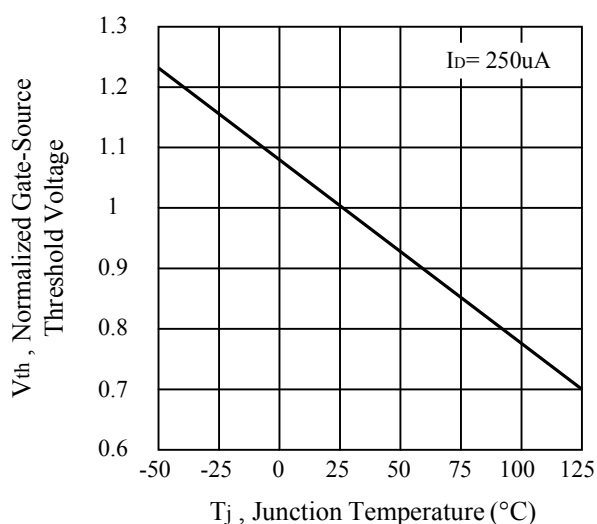


Figure 5. Gate Threshold Variation with Temperature

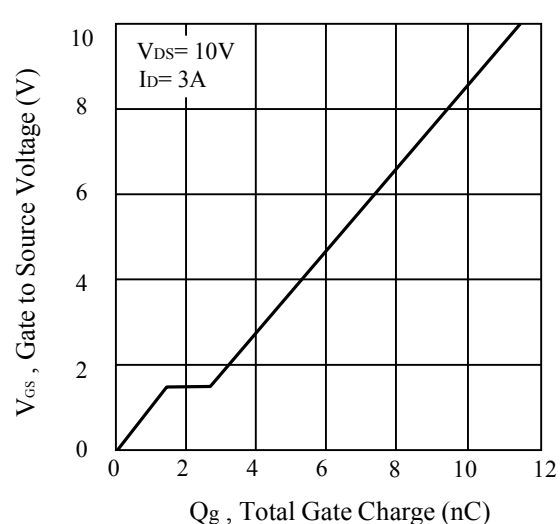


Figure 6. Gate Charge

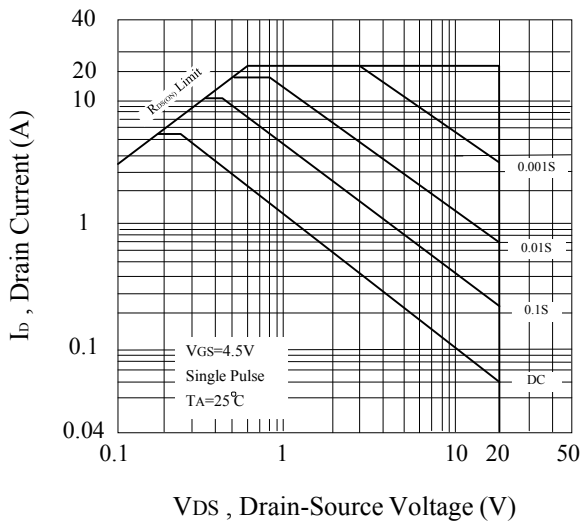


Figure 7. Maximum Safe Operating Area

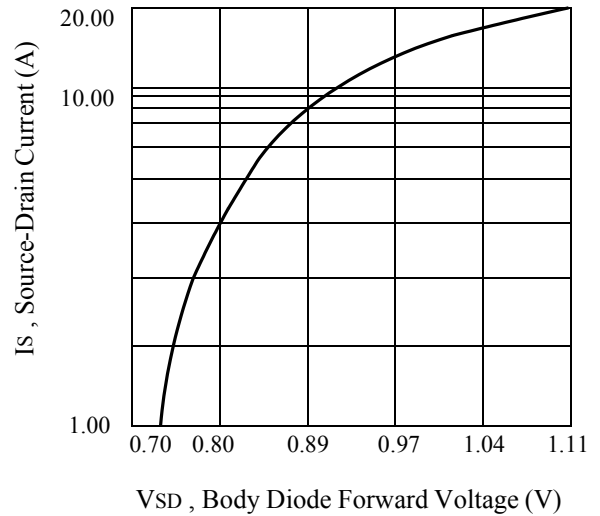


Figure 8. Body Diode Forward Voltage Variation with Source Current

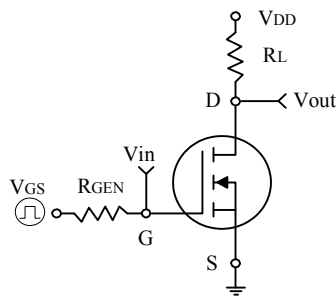


Figure 9. Switching Test Circuit and Switching Waveforms

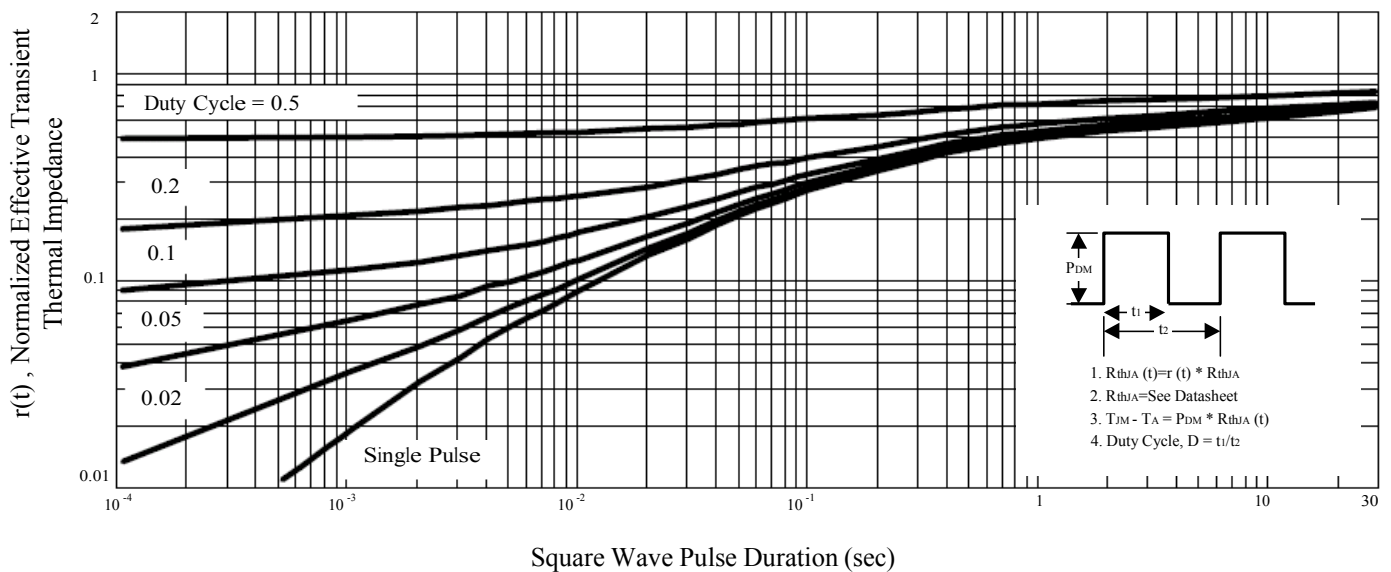
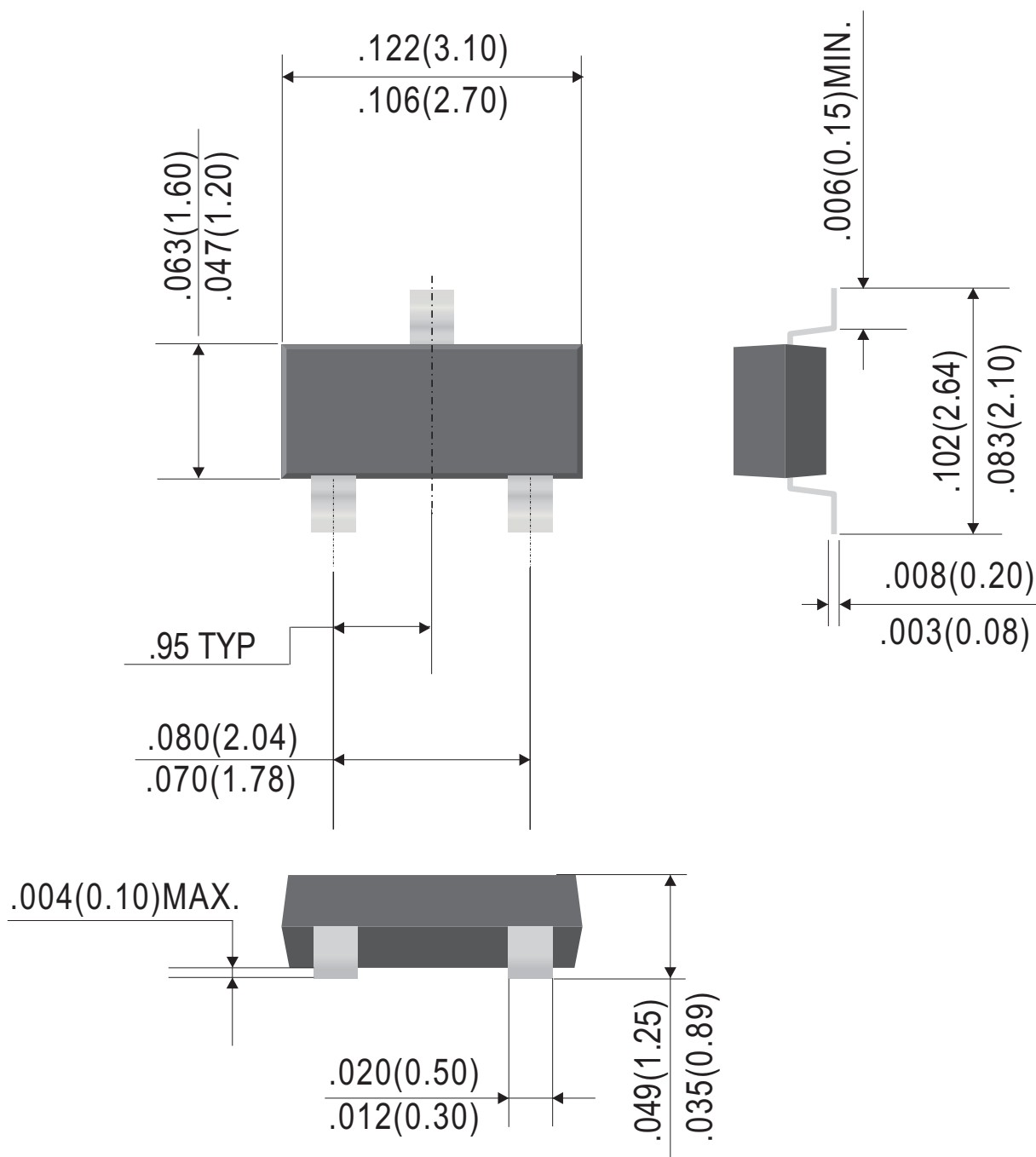


Figure 10. Normalized Thermal Transient Impedance Curve

Outline Drawing

SOT-23



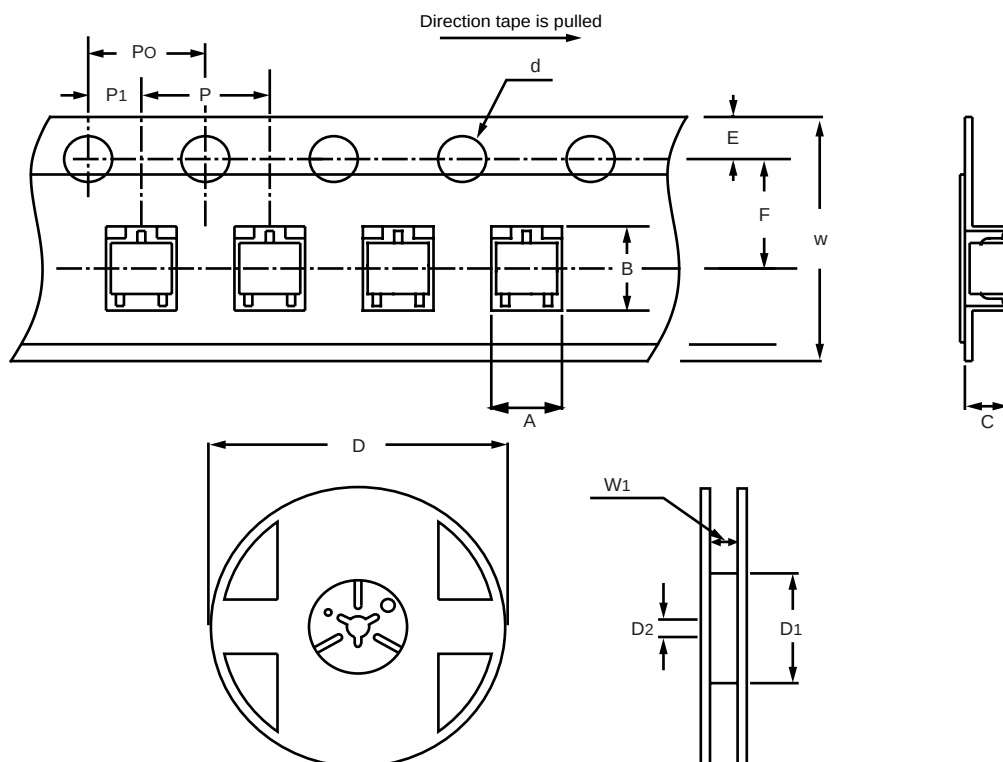
Dimensions in inches and (millimeters)

Rev.E

Suggested Soldering Pad Layout	SOT-23
The diagram illustrates the suggested soldering pad layout for an SOT-23 package. It features three yellow rectangular pads arranged in a triangular pattern. The dimensions are specified in inches and millimeters (in parentheses): - The left pad has a width of 0.0435 inches (1.10 mm). - The right pad has a width of 0.0315 inches (0.80 mm). - The distance between the inner edges of the left and right pads is 0.0435 inches (1.10 mm). - The distance between the top edges of the left and right pads is 0.0355 inches (0.90 mm). - The bottom pad is positioned centrally below the other two, with a width of 0.0315 inches (0.80 mm).	
Dimensions in inches and (millimeters)	

Reel Taping Sepecification - Surface Mount Device/SOT-23

Reel Packing



ITEM	SYMBOL	SPECIFICATIONS (mm)	SPECIFICATIONS (inch)
Carrier width	A	3.1±0.1	0.122±0.004
Carrier length	B	2.85±0.1	0.112±0.004
Carrier depth	C	1.40±0.1	0.055±0.004
Sprocket hole	d	1.5 + 0.1/-0	0.059 + 0.004/-0
Reel outside diameter	D	180 + 0/-3	7.083 + 0/-0.118
Reel inner diameter	D1	60 + 1/-0	2.361 + 0.039/-0
Feed hole diameter	D2	13±0.2	0.512±0.008
Sprocket hole position	E	1.75±0.1	0.069±0.004
Punch hole position	F	3.5±0.05	0.138±0.002
Punch hole pitch	P	4.0±0.1	0.157±0.004
Sprocket hole pitch	P0	4.0±0.1	0.157±0.004
Embossment center	P1	2.0±0.05	0.079±0.002
Tape width	W	8.0±0.2	0.315±0.008
Reel width	W1	9.0±0.3	0.354±0.012

NOTE: 1.Devices are packed in accordance with EIAJ stand ETX-7001 and specifications listed above.

2. Available on 7 inch (3,000 c.t.) or 13 inch (10,000 c.t.) diameter reels.

Device PN	Packing
{9ноллD5 -T ⁽¹⁾ G ⁽²⁾ -WS	Tape&Reel: 3 Kpcs/Reel

(2) RoHS product for packing code suffix "G" ; Halogen free product for packing code suffix "H"

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