

Description:

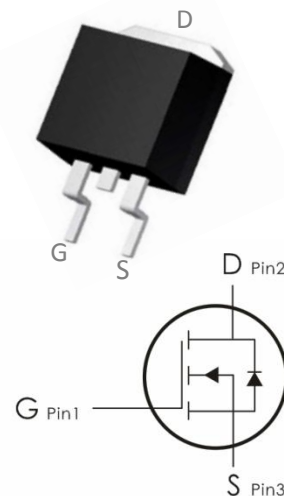
This N-Channel MOSFET uses advanced SGT technology and

design to provide excellent $R_{DS(on)}$ with low gate charge.

It can be used in a wide variety of applications.

Features:

- 1) $V_{DS}=150V, I_D=130A, R_{DS(on)} < 7m\Omega @ V_{GS}=10V$ (Typ: $6m\Omega$)
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density SGT technology for ultra low $R_{DS(on)}$.
- 5) Excellent package for good heat dissipation.
- 6) MSL3



Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
DOB130N15T	130N15T	TO- 263	800 pcs/Reel

Absolute Maximum Ratings: ($T_C=25^\circ C$ unless otherwise noted)

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	150	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current ¹	130	A
	Continuous Drain Current- $T_C=100^\circ C$ ¹	91	
I_{DM}	Pulsed Drain Current ²	520	
P_D	Power Dissipation	240	W
E_{AS}	Single pulse avalanche energy ³	566	mJ
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55-+150	$^\circ C$

Thermal Characteristics:

Symbol	Parameter	Max	Units
$R_{\theta JC}$	Thermal Resistance, Junction to Case	0.65	$^\circ C/W$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	55	$^\circ C/W$

Electrical Characteristics: ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250 μ A	150	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =150V	---	---	10	μ A
I _{GSS}	Gate-Source Leakage Current	V _{GS} =± 20V, V _{DS} =0A	---	---	± 100	nA
On Characteristics						
V _{GS(th)}	Gate-Source Threshold Voltage	V _{GS} =V _{DS} , I _D =250 μ A	2	3	4	V
R _{DS(ON)}	Drain-Source On Resistance ⁴	V _{GS} =10V, I _D =20A	---	6	7	m Ω
Dynamic Characteristics						
C _{iss}	Input Capacitance	V _{DS} =75V, V _{GS} =0V, f=1MHz	---	9000	---	pF
C _{oss}	Output Capacitance		---	529	--	
C _{rss}	Reverse Transfer Capacitance		---	17	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DS} =75V, I _D =20A, R _{ENG} =3 Ω ,V _{GS} =10V	---	22	---	ns
t _r	Rise Time		---	41	---	ns
t _{d(off)}	Turn-Off Delay Time		---	66	---	ns
t _f	Fall Time		---	33	---	ns
Q _g	Total Gate Charge	V _{GS} =10V, V _{DS} =75V, I _D =20A	---	130	---	nC
Q _{gs}	Gate-Source Charge		---	29	---	nC
Q _{gd}	Gate-Drain “Miller” Charge		---	20	---	nC
Drain-Source Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _{SD} =1A	---	---	1	V
I _S	Continuous Drain Current	V _D =V _G =0V	---	---	130	A
I _{SM}	Pulsed Drain Current		---	---	520	A
T _{rr}	Reverse Recovery Time	I _F =15A, T _J =25 °C	---	98	---	ns
Q _{rr}	Reverse Recovery Charge	di/dt=100A/us	---	316	---	nC

Notes:

1. Computed continuous current assumes the condition of $T_{j,Max}$ while the actual continuous current depends on the thermal & electro-mechanical application board design
2. Repetitive Rating: Pulse Width Limited by Maximum Junction Temperature
3. EAS condition : $T_J=25^{\circ}C$, $V_{DD}=75V$, $V_G=10V$, $L=0.5mH$
4. Pulse Test: Pulse Width $\leq 300\mu s$, Duty Cycle $\leq 0.5\%$

Typical Characteristics: ($T_C=25^{\circ}C$ unless otherwise noted)

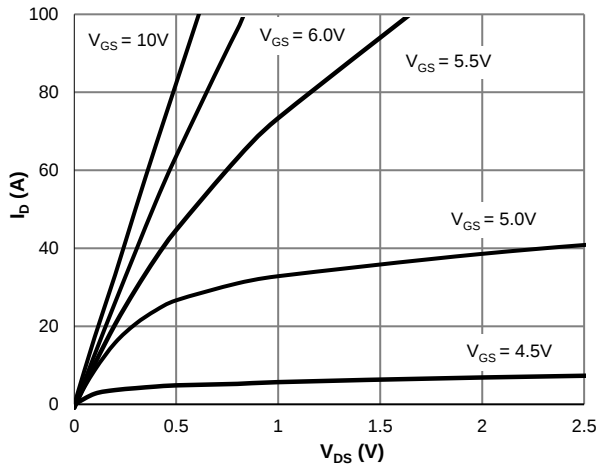


Figure 1: Saturation Characteristics

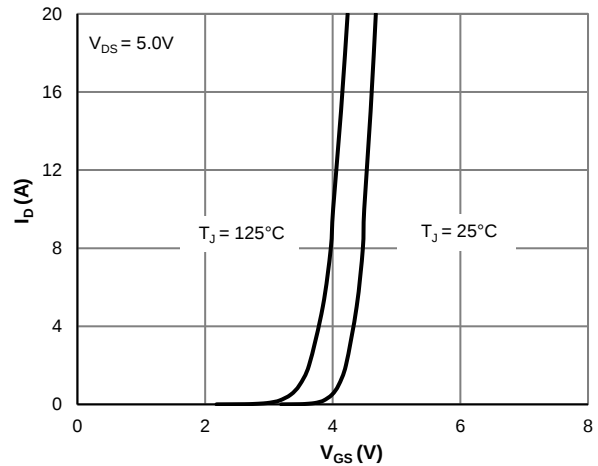


Figure 2: Transfer Characteristics

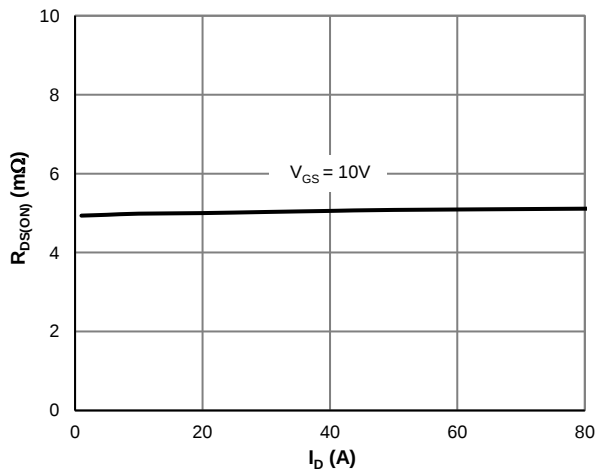


Figure 3: $R_{DS(ON)}$ vs. Drain Current

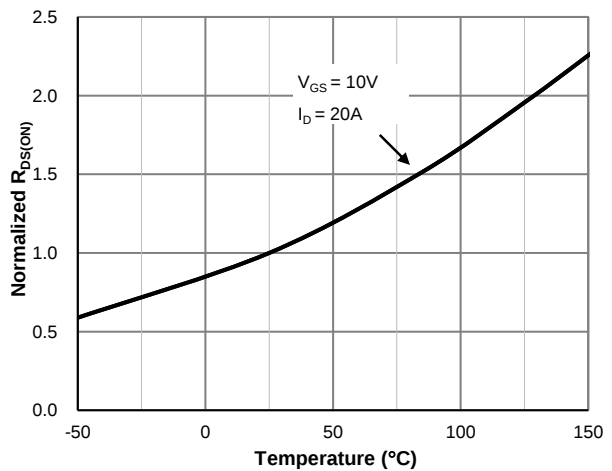


Figure 4: $R_{DS(ON)}$ vs. Junction Temperature

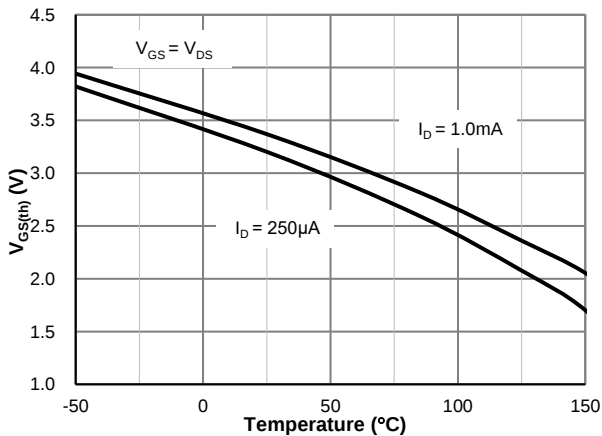


Figure 5: $V_{GS(th)}$ vs. Junction Temperature

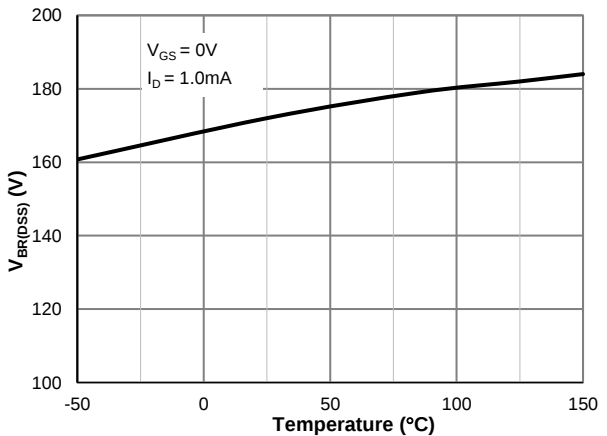


Figure 6: $V_{BR(DSS)}$ vs. Junction Temperature

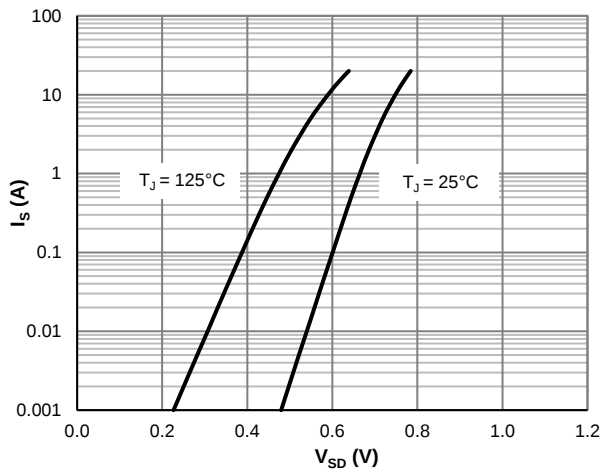


Figure 7: Body-Diode Characteristics

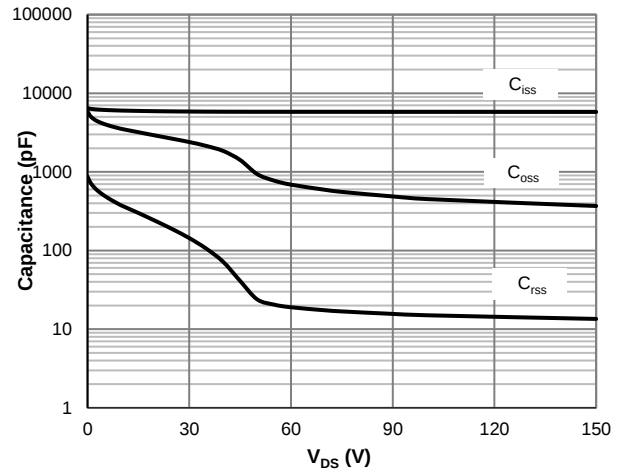


Figure 8: Capacitance Characteristics

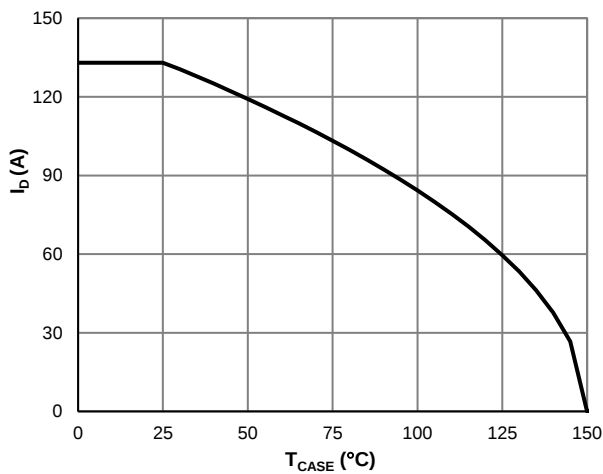


Figure 9: Current De-rating

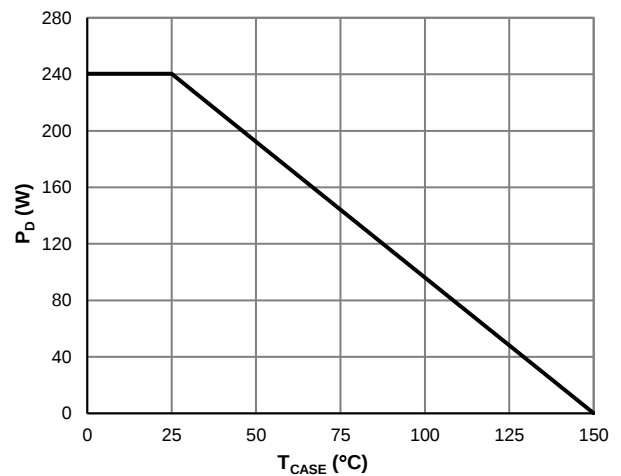


Figure 10: Power De-rating

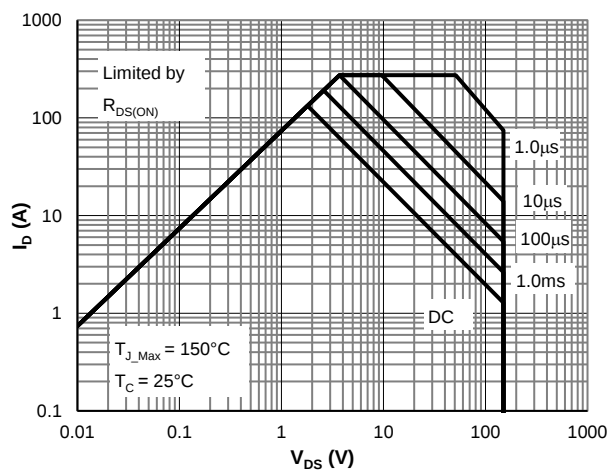


Figure 11: Maximum Safe Operating Area

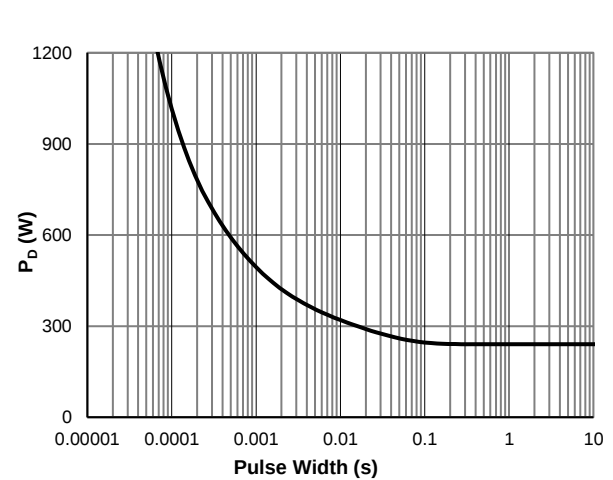


Figure 12: Single Pulse Power Rating, Junction-to-Case

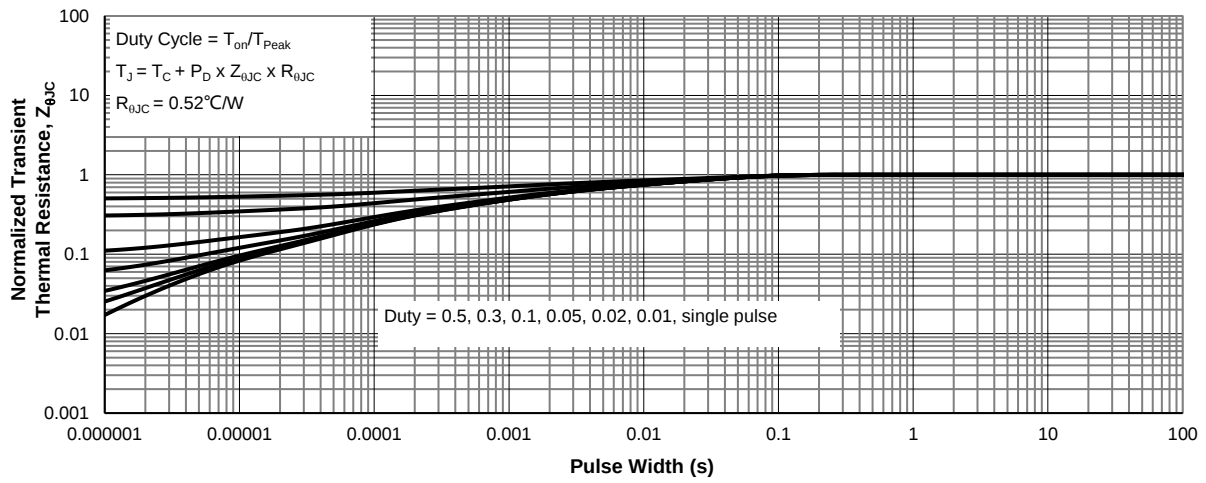
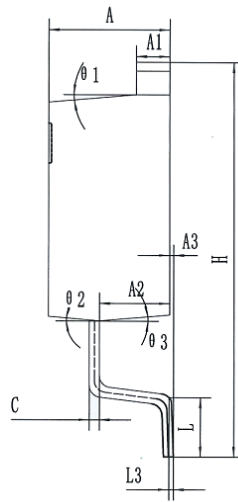
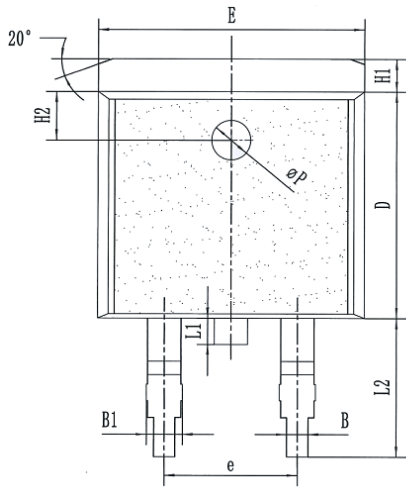


Figure 13: Normalized Maximum Transient Thermal Impedance

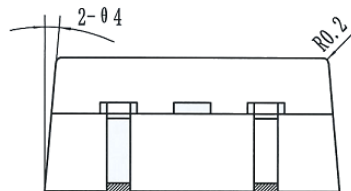
TO-263 Package Information: Unit:mm

Package Outline Type-A

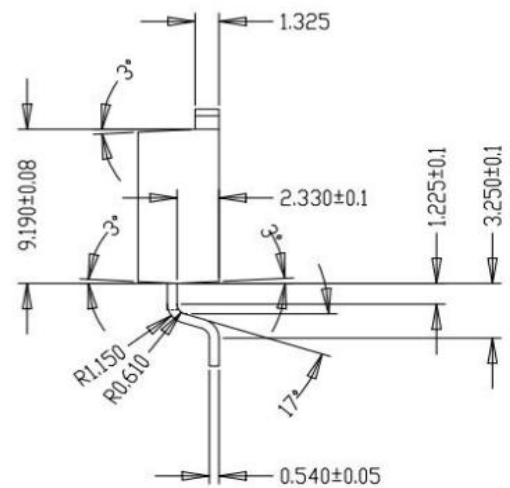
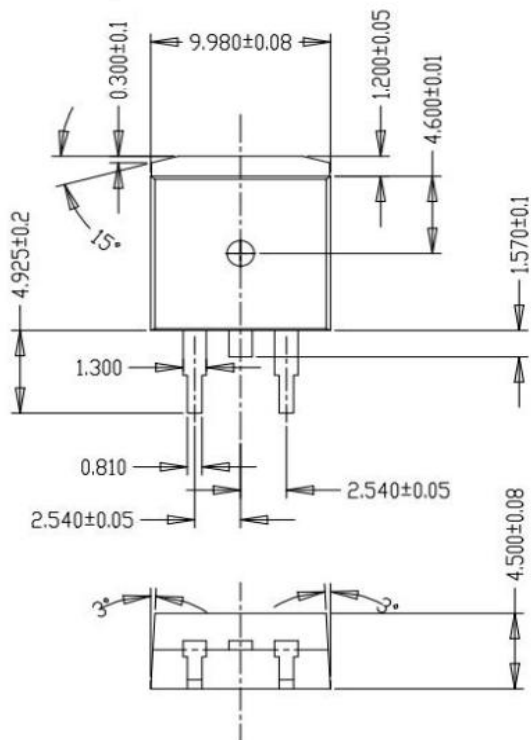


COMMON DIMENSIONS

SYMBOL	MIN	NOM	MAX
A	4.50	4.60	4.70
A1	1.22	1.27	1.32
A2	2.57	2.67	2.77
A3	0.00		0.15
B	0.76	0.81	0.87
B1	1.32	1.37	1.42
C	0.33	0.38	0.43
D	8.55	8.65	8.75
e	5.08 BSC		
E	10.06	10.16	10.26
H	14.80	15.00	15.20
H1	1.17	1.27	1.37
H2	1.85 REF		
L	2.09	2.39	2.69
L1	0.80	1.00	1.20
L2	4.88	5.08	5.28
L3	0.25 REF		
ΦP	1.40	1.50	1.60
θ1	3°	5°	7°
θ2	3°	5°	7°
θ3	3°	5°	7°
θ4	3°	5°	7°

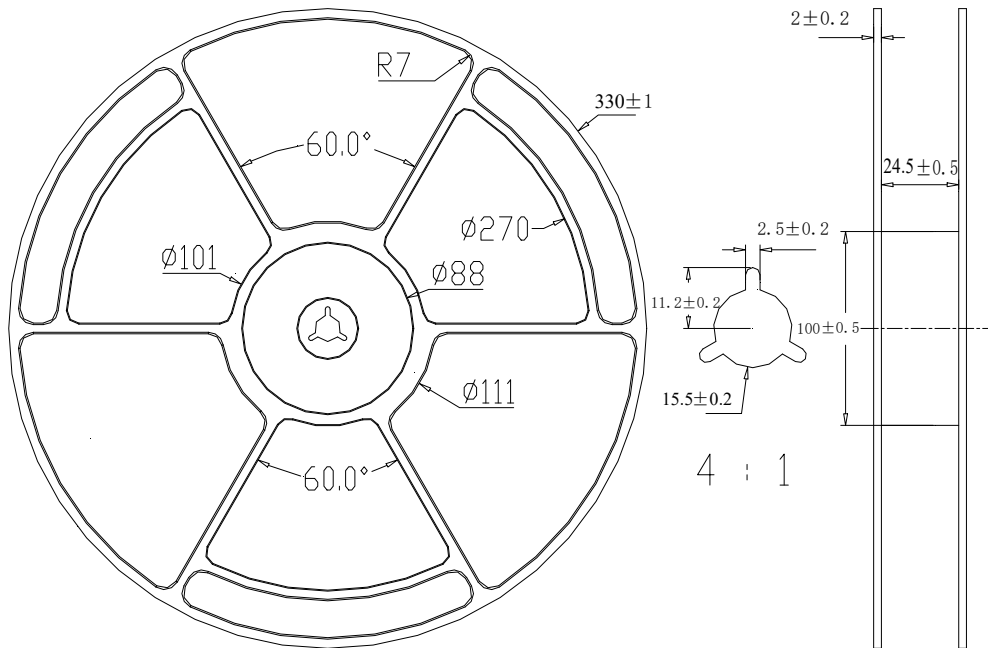


Package Outline Type-B

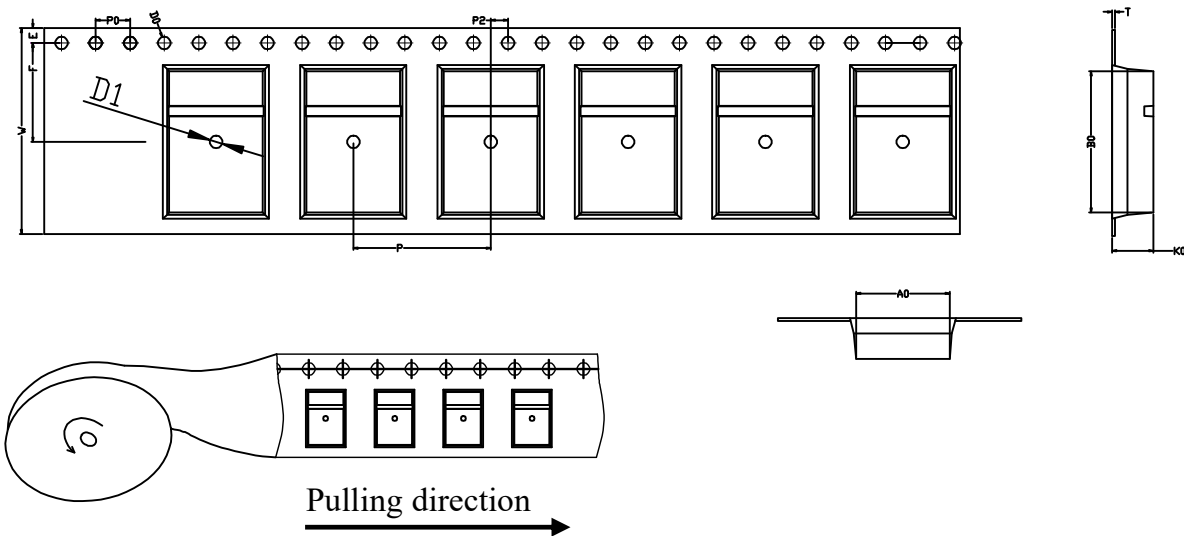


Tape & Reel Information

Dimensions in mm



ITEM	W	A0	B0	K0	S0	E	F	D0	D1
DIM	24	10.9	16.45	4.8	/	1.75	11.5	1.5	1.5
TOLR	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.10 -0.10	+0.16 -0.00	+0.10 -0.10



Marking Information:

①. Doingter LOGO

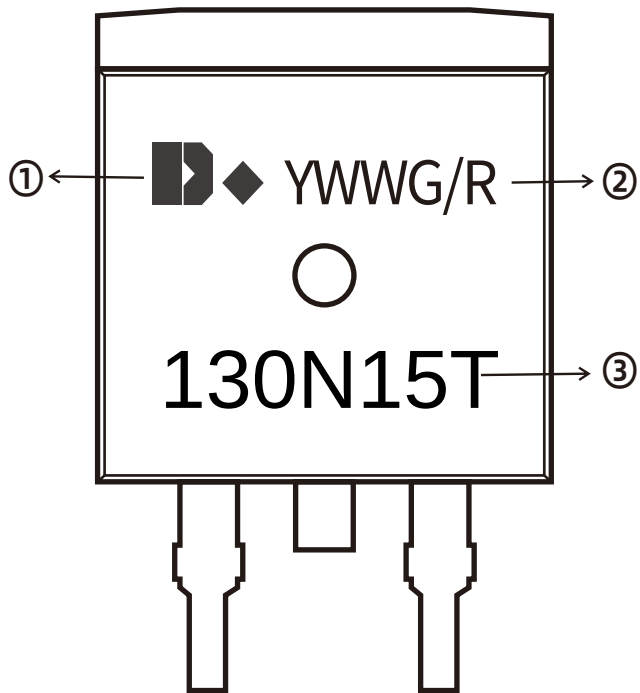
②. Date Code(YWWG / R)

Y : Year Code , last digit of the year

WW : Week Code(01-53)

G/R : G(Green) /R(Lead Free)

③. Part NO.



Previous Version

Version	Date	Subjects (major changes since last revision)
1.0	2025-05-12	Release of final version

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