

Description:

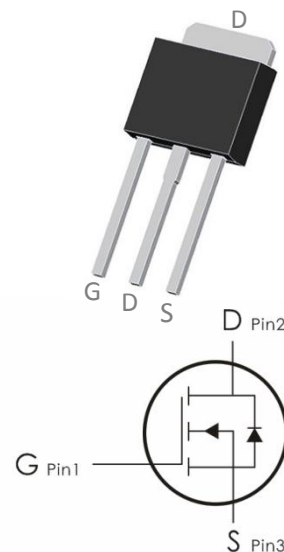
This N-Channel MOSFET uses advanced trench technology and

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

It can be used in a wide variety of applications.

Features:

- 1) $V_{DS}=60V, I_D=50A, R_{DS(ON)} < 17m\Omega @ V_{GS}=10V$
- 2) Low gate charge.
- 3) Green device available.
- 4) Advanced high cell density trench technology for ultra low $R_{DS(ON)}$.
- 5) Excellent package for good heat dissipation.



Package Marking and Ordering Information:

Part NO.	Marking	Package	Packing
UE018NG-F	E018N-F	TO- 251	80 pcs/Tube

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

Symbol	Parameter	Ratings	Units
V_{DS}	Drain-Source Voltage	60	V
V_{GS}	Gate-Source Voltage	± 20	V
I_D	Continuous Drain Current $T_C=25^\circ C$	50	A
	Continuous Drain Current $T_C=100^\circ C$	32	
I_{DM}	Pulsed Drain Current ³	200	
P_D	Power Dissipation	62.5	W
E_{AS}	Single pulse avalanche energy ¹	98	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	2	$^\circ C/W$

R_{θJA}	Thermal Resistance, Junction to Ambient	62	°C/W
------------------------	---	----	------

Electrical Characteristics: (T_C=25°C unless otherwise noted)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
Off Characteristics						
BV _{DSS}	Drain-Sourtce Breakdown Voltage	V _{GS} =0V,I _D =250 μ A	60	---	---	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{GS} =0V, V _{DS} =60V	---	---	1	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	1.2	1.8	2.5	V
R _{DS(ON)}	Drain-Source On Resistance	V _{GS} =10V,I _D =20A	---	13.5	17	m Ω
		V _{GS} =4.5V,I _D =20A	---	18	23	m Ω
Dynamic Characteristics						
C _{iSS}	Input Capacitance	V _{DS} =30V, V _{GS} =0V, f=1MHz	---	1888	---	pF
C _{oss}	Output Capacitance		---	112	--	
C _{rSS}	Reverse Transfer Capacitance		---	91	---	
Switching Characteristics						
t _{d(on)}	Turn-On Delay Time	V _{DS} =30V, I _D =20A, R _{ENG} =3 Ω ,V _{GS} =10V	---	12	---	ns
t _r	Rise Time		---	24	---	ns
t _{d(off)}	Turn-Off Delay Time		---	59	---	ns
t _f	Fall Time		---	8	---	ns
Q _{gs}	Total Gate Charge	V _{GS} =10V, V _{DS} =30V, I _D =20A	---	39	---	nc
Q _{gd}	Gate-Source Charge		---	7.7	---	nc
Q _g	Gate-Drain “Miller” Charge		---	8.2	---	nc
Drain-Source Diode Characteristics						
V _{SD}	Diode Forward Voltage	V _{GS} =0V, I _{SD} =20A	---	---	1.2	V
I _S	Continuous Drain Curren	VD=VG=0V	---	---	50	A
I _{SM}	Pulsed Drain Current		---	---	200	A
Trr	Reverse Recovery Time ³	I _F =20A,T _J =25 °C	---	29	---	ns

Qrr	Reverse Recovery Charge	$di/dt=100A/us$	---	21	---	nc
------------	-------------------------	-----------------	-----	----	-----	----

Notes:

1. $L=0.5mH$, $V_{DD}=30V$, Start $T_J=25^{\circ}C$.
2. Limited by maximum junction temperature.
3. Repetitive Rating: Pulse width limited by maximum junction temperature.

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

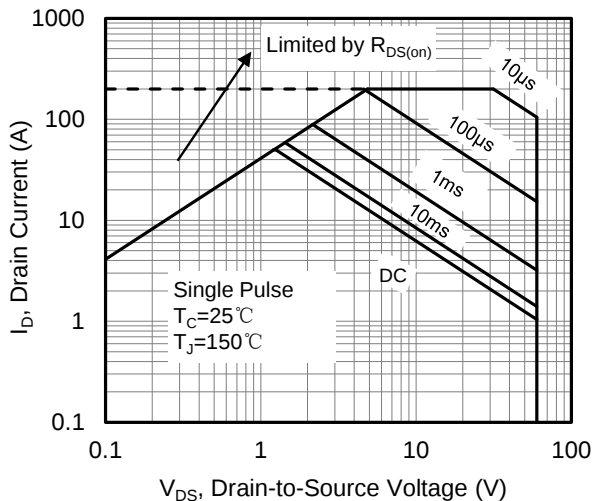


Figure 1. Maximum Safe Operating Area

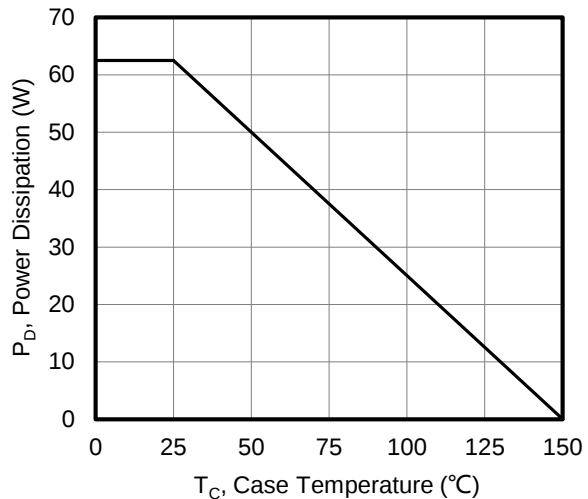


Figure 2. Maximum Power Dissipation vs. Case Temperature

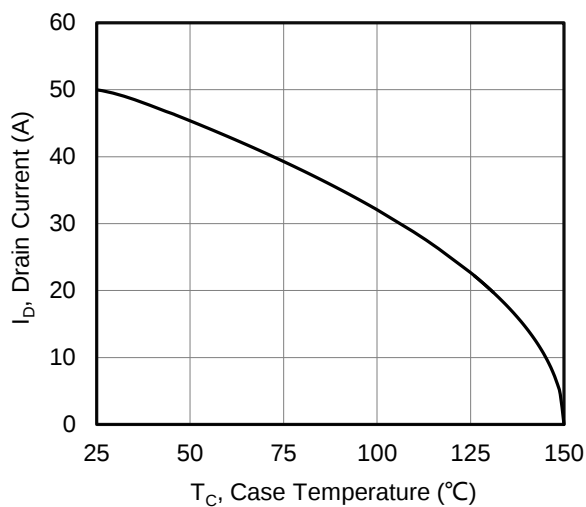


Figure 3. Maximum Continuous Drain Current vs. Case Temperature

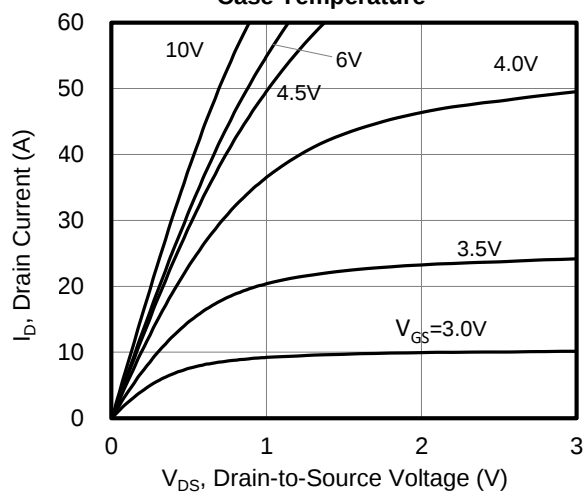


Figure 4. Typical output Characteristics

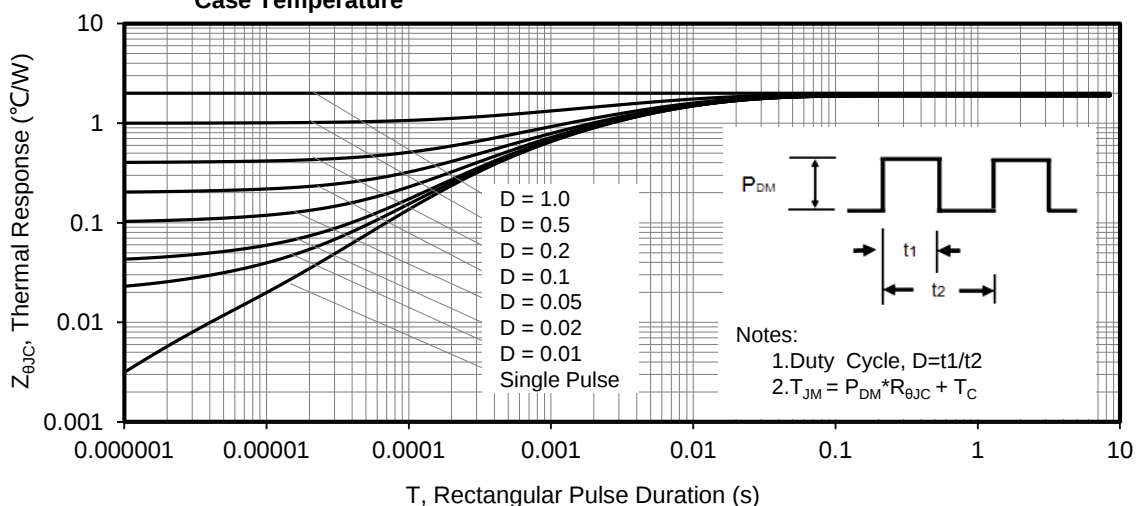


Figure 5. Maximum Effective Thermal Impedance, Junction to Case

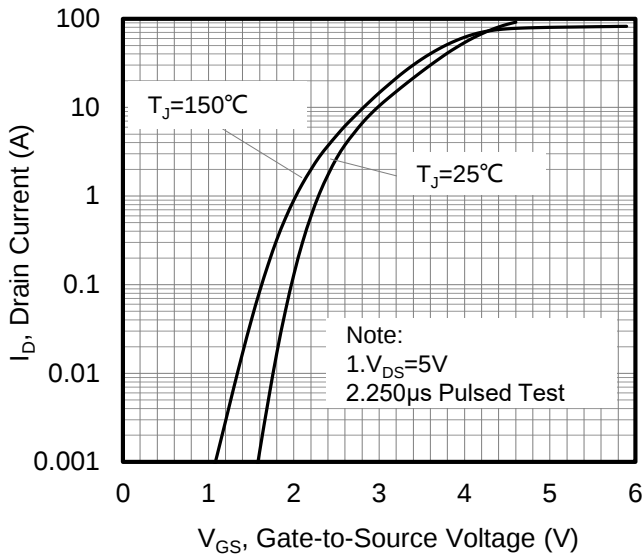


Figure 6. Typical Transfer Characteristics

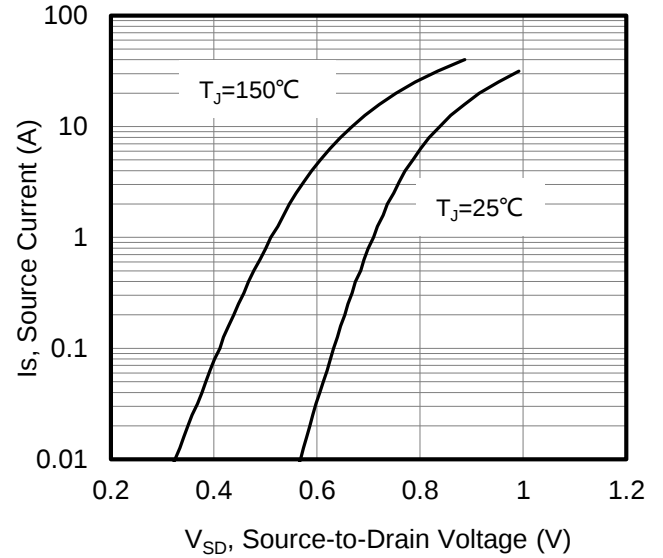


Figure 7. Typical Body Diode Transfer Characteristics

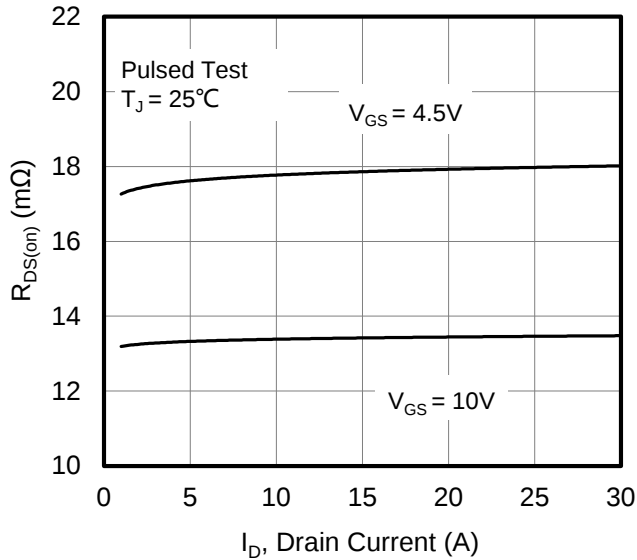


Figure 8. Drain-to-Source On Resistance vs Drain Current

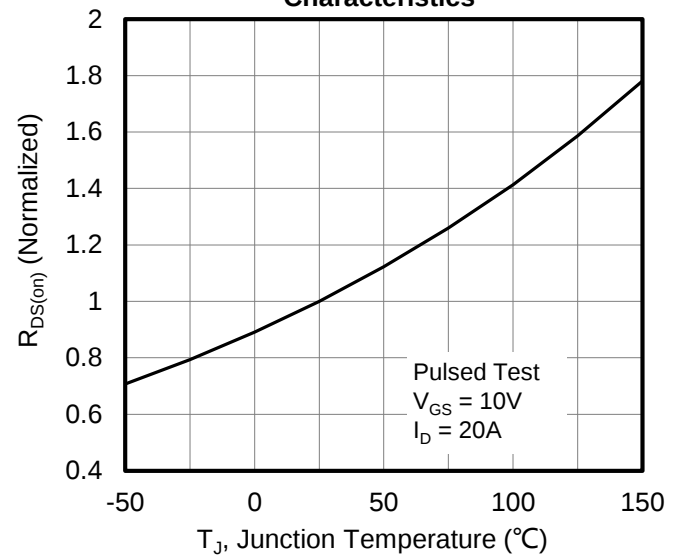


Figure 9. Normalized On Resistance vs Junction Temperature

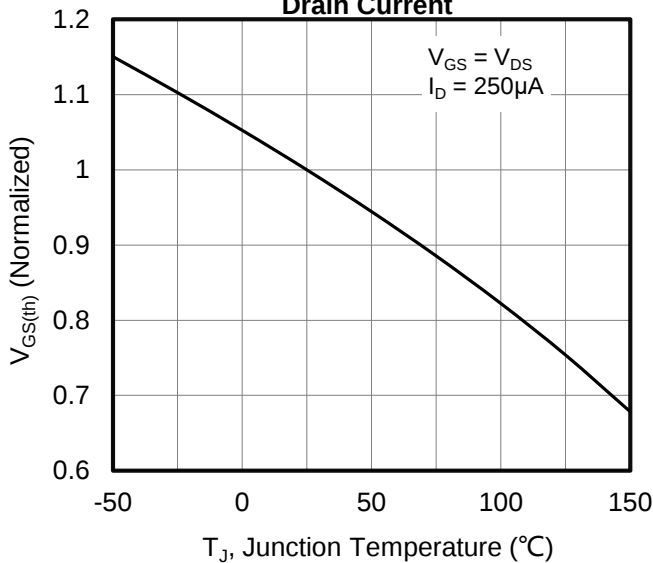


Figure 10. Normalized Threshold Voltage vs Junction Temperature

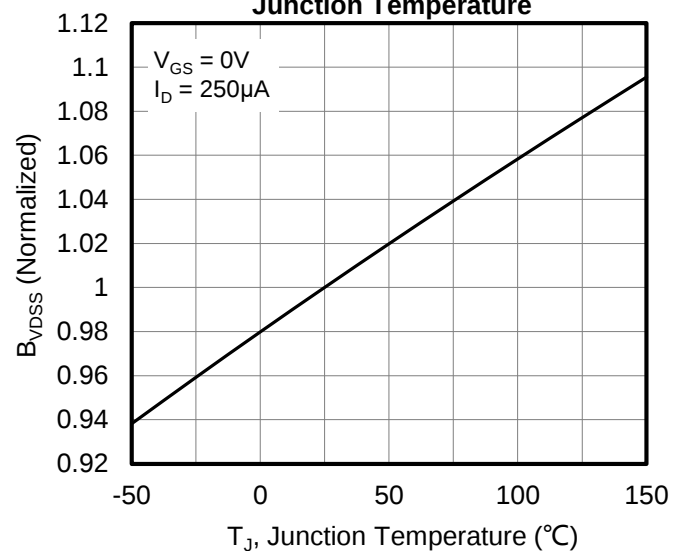


Figure 11. Normalized Breakdown Voltage vs Junction Temperature

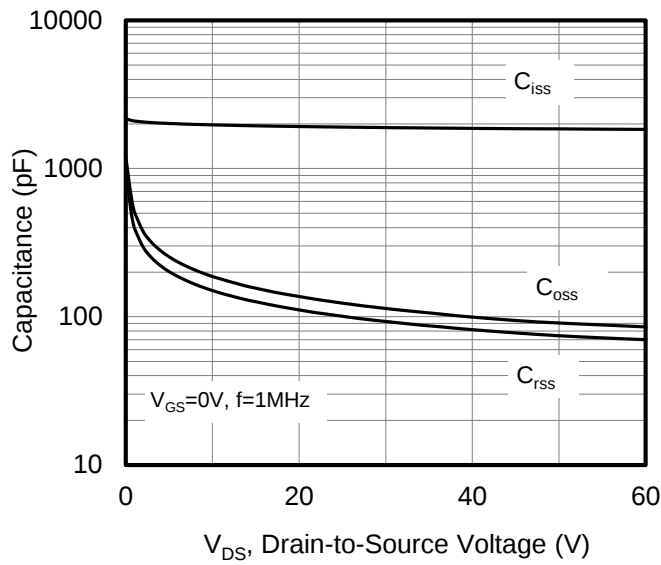


Figure 12. Capacitance Characteristics

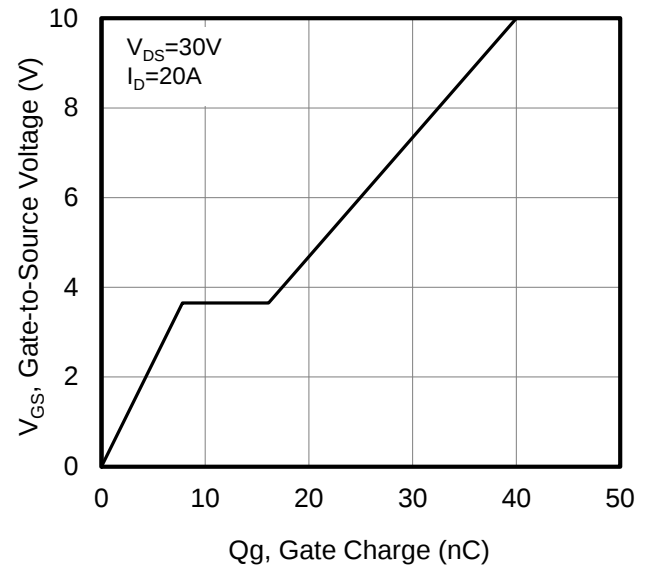
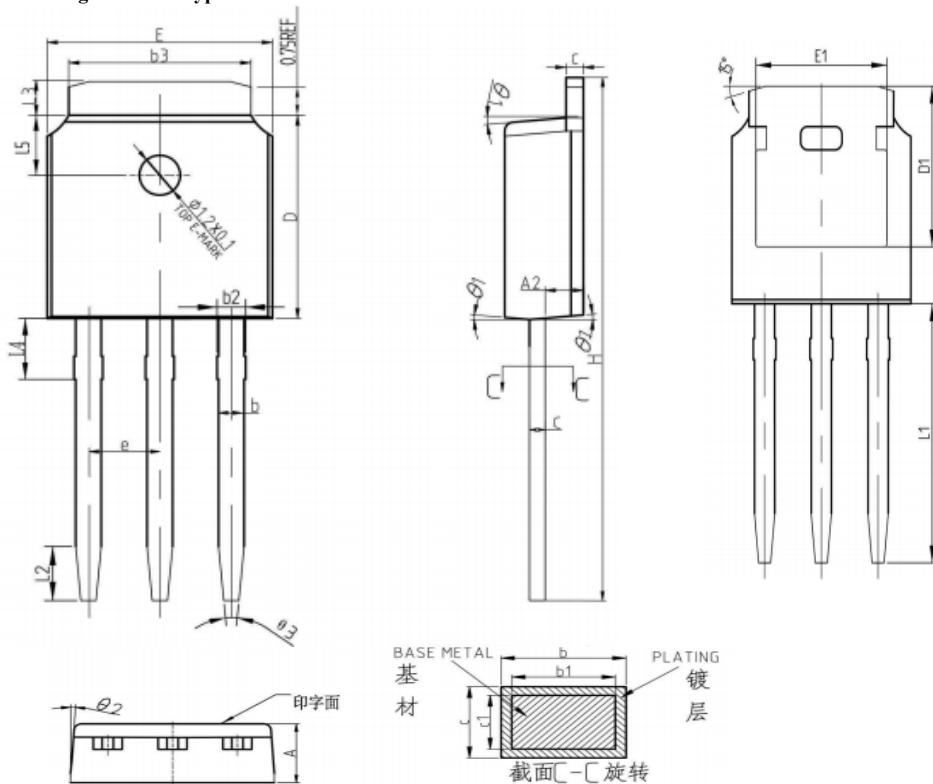


Figure 13. Typical Gate Charge vs Gate to Source Voltage

TO-251 Package Information

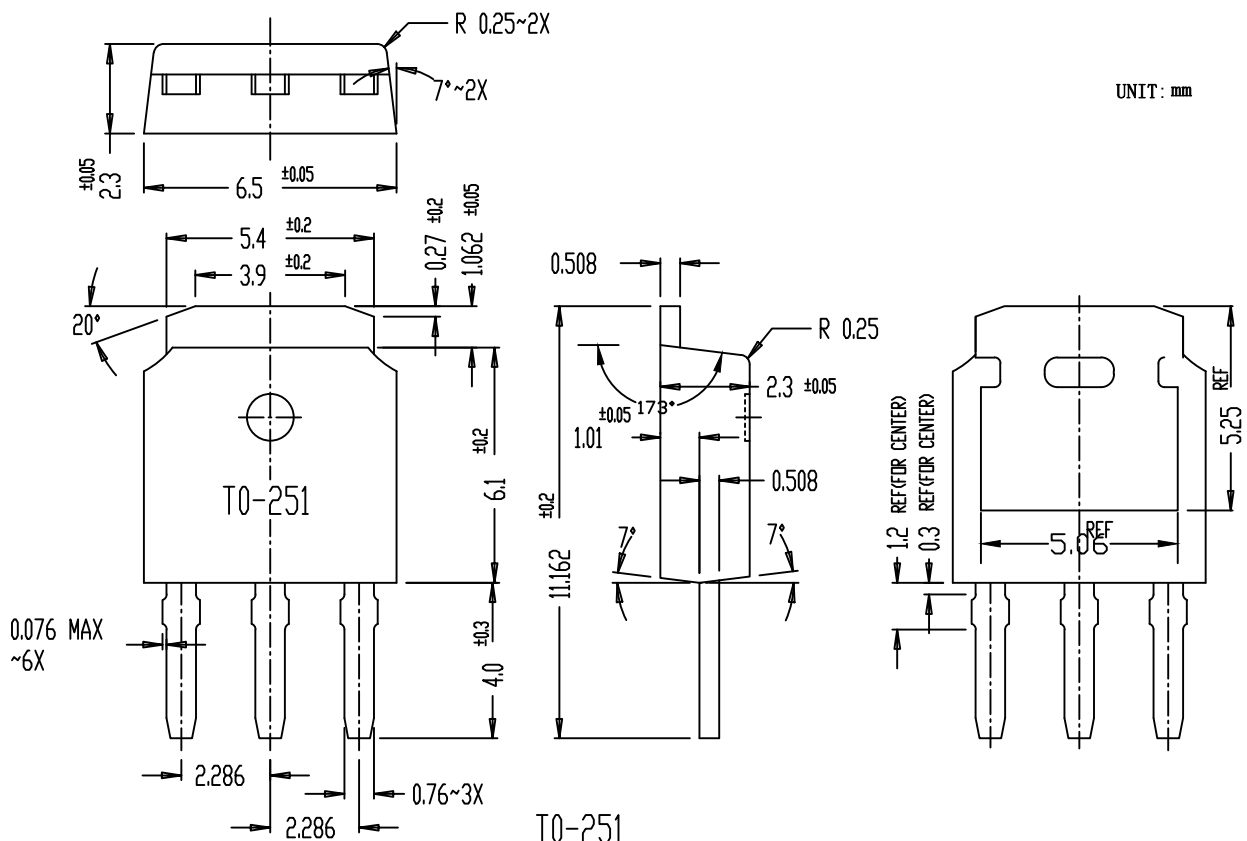
Package Outline Type-A



SYMBOL	mm		
	MIN	NOM	MAX
*A	2.20	2.30	2.38
*A2	0.97	1.07	1.17
*b	0.72	0.78	0.85
b1	0.71	0.76	0.81
*b2	0.72	0.88	0.95
*b3	5.23	5.33	5.46
*c	0.47	0.53	0.58
c1	0.46	0.51	0.56
*D	6.00	6.10	6.20
D1	5.30REF		
*E	6.50	6.60	6.70
E1	4.70	4.83	4.92
*e	2.286BSC		
*H	16.10	16.40	16.60
*L1	9.20	9.40	9.60
L2	1.25	1.35	1.45
*L3	0.90	1.02	1.22
L4	0.95	1.05	1.15
L5	1.70	1.80	1.90
θ 1	5°	7°	9°
θ 2	5°	7°	9°
θ 3	11°	13°	15°

带*为检验尺寸

Package Outline Type-B



T0-251

Marking Information:

①. Doingter LOGO

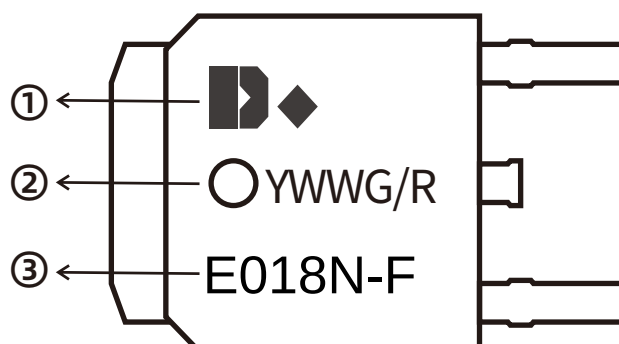
②. Date Code(YWWG / R)

Y : Year Code , last digit of the year

WW : Week Code(01-53)

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

③. Part NO.



Attention :

- Information furnished in this document is believed to be accurate and reliable. However, Shenzhen Doingter Semiconductor Co.,Ltd. assumes no responsibility for the consequences of use without consideration for such information nor use beyond it.
 - Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Shenzhen Doingter complies with the agreement. Products and information provided in this document have no infringement of patents.
 - Shenzhen Doingter assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information. This document supersedes and replaces all information previously supplied.
-  Is a registered trademark of Shenzhen Doingter Semiconductor Co., Ltd. Copyright © 2013 Shenzhen Doingter Semiconductor Co.,Ltd. Printed All rights reserved.