Features:

- ☐ Low Intrinsic Capacitances.
- ☐ Excellent Switching Characteristics.
- ☐ Extended Safe Operating Area.
- ☐ Unrivalled Gate Charge :Qg= 18nC (Typ.).
- ☐ BVDSS=600V,I_D=11A
- ☐ R_{DS}(on) : 0.38 Ω (Max) @V_G=10V
- ☐ 100% Avalanche Tested

RoHS COMPLIANT

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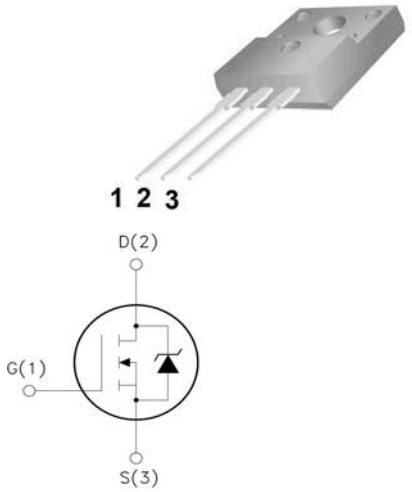

1.Gate (G)
2.Drain (D)
3.Source (S)

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

Symbol	Parameter		Value	Unit
V_{DSS}	Drain-Source Voltage		600	V
I_D	Drain Current	T_C=25℃	11	A
		T_C=100℃	7.2	
V_{GSS}	Gate-Source Voltage		±20	V
E_{AS}	Single Pulse Avalanche Energy (note1)		210	mJ
I_{AR}	Avalanche Current (note2		11	A
P_D	Power Dissipation (Tc=25℃)		50	W
T_j	Junction Temperature(Max)		150	℃
T_{stg}	Storage Temperature		-55~+150	
TL	Maximum lead temperature for soldering purpose,1/8” from case for 5 seconds		300	

Thermal Characteristics

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JC}$	Thermal Resistance,Junction to Case	-	4.6	℃/W
$R_{\theta JA}$	Thermal Resistance,Junction to Ambient	-	65	

Electrical Characteristics (Ta=25℃ unless otherwise noted)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
Off Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	I_D=250μA，V_{GS}=0	600	-	-	V
△BVDSS/△TJ	Breakdown Voltage Temperature Coefficient	I_D=250μA ,Reference to 25℃	-	0.44	-	V/℃
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=600V, V_{GS}=0V	-	-	10	μA
		V_{DS}=480V, Tc=125℃			100	
I_{GSSF}	Gate-body leakage Current, Forward	V_{GS}=+30V, V_{DS}=0V	-		100	nA
I_{GSSR}	Gate-body leakage Current, Reverse	V_{GS}=-30V, V_{DS}=0V	-		-100	
On Characteristics						
$V_{GS(TH)}$	Date Threshold Voltage	I_D=250μA,V_{DS}=V_{GS}	2.6	-	3.8	V
$R_{DS(ON)}$	Static Drain-Source On-Resistance	I_D=5.5A,V_{GS} =10V	-	0.35	0.38	Ω
Dynamic Characteristics						
Ciss	Input Capacitance	V_{DS}=100V，V_{GS}=0，f=1.0MHz	-	955	-	pF
Coss	Output Capacitance		-	29	-	
Crss	Reverse Transfer Capacitance		-	2.4	-	
Switching Characteristics						
Td(on)	Turn-On Delay Time	V_{DD}=480V，I_D=5.5A R_G=20Ω (Note 3,4)	-	20	-	ns
Tr	Turn-On Rise Time		-	13	-	
Td(off)	Turn-Off Delay Time		-	43	-	
Tf	Turn-Off Rise Time		-	16	-	
Qg	Total Gate Charge	V_{DS}=480,V_{GS}=10V，I_D=5.5A (Note 3,4)	-	18	-	nC
Qgs	Gate-Source Charge		-	7	-	
Qgd	Gate-Drain Charge		-	4.5	-	
Drain-Source Diode Characteristics and Maximum Ratings						
Is	Max. Diode Forward Current	-	-	-	11	A
I_{SM}	Max. Pulsed Forward Current	-	-	-	44	
V_{SD}	Diode Forward Voltage	I_D=5.5A	-	-	1.5	V
Trr	Reverse Recovery Time	I_S=5A,V_{GS} =0V diF/dt=100A/μs (Note3)	-	251	-	ns
Qrr	Reverse Recovery Charge		-	3.1	-	μC

NOTES:
1. Repetitive Rating: Pulse width limited by maximum junction temperature
2. I_{AS}=1.8A, VDD=50V, Starting TJ=25℃
3. I_{SD}≤ID, di/dt ≤ 200A/us, V_{DD} ≤ BV_{DSS}, Starting TJ = 25 ℃
4. Pulse Test: Pulse width ≤ 300us, Duty Cycle ≤ 2%
5. Essentially Independent of Operating Temperature Typical Characteristics

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Typical Characteristics

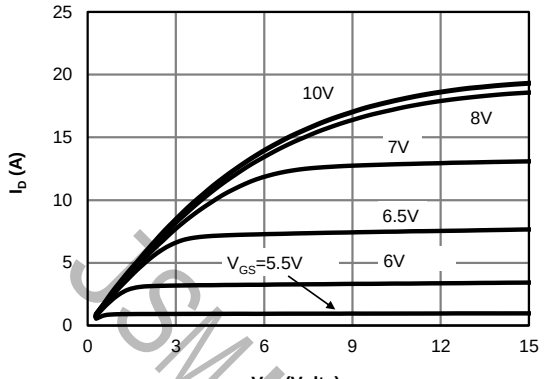

Figure 1: On-Region Characteristics

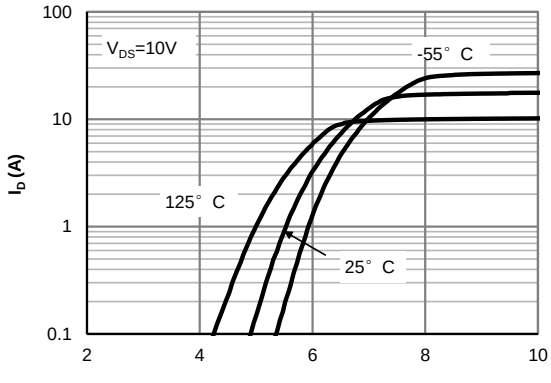

Figure 2: Transfer Characteristics

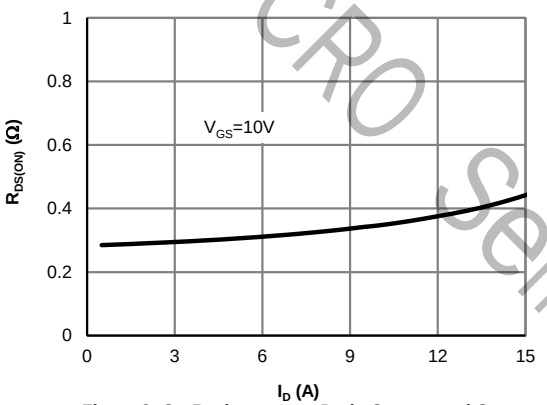

Figure 3: On-Resistance vs. Drain Current and Gate Voltage

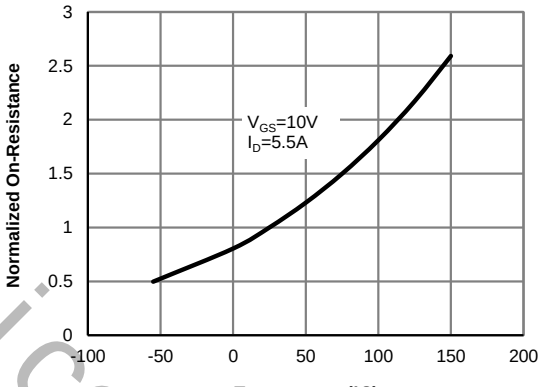

Figure 4: On-Resistance vs. Junction Temperature

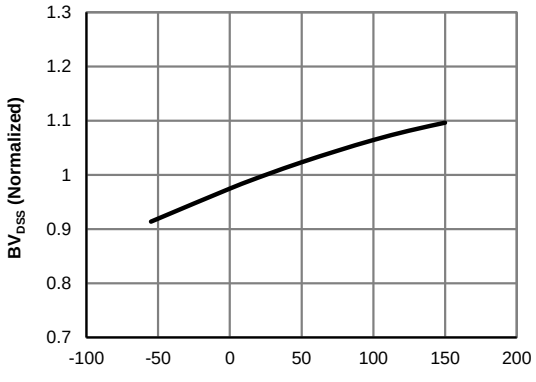

Figure 5: Break Down vs. Junction Temparature

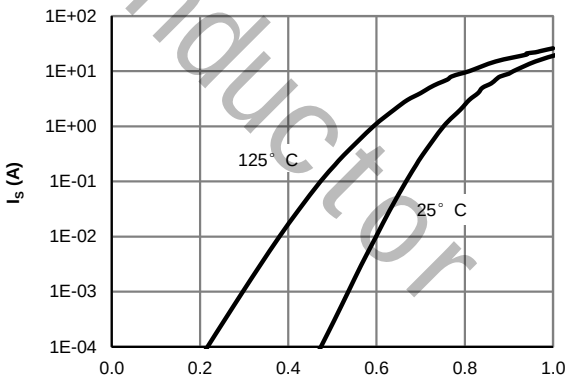

Figure 6: Body-Diode Characteristics

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Typical Characteristics

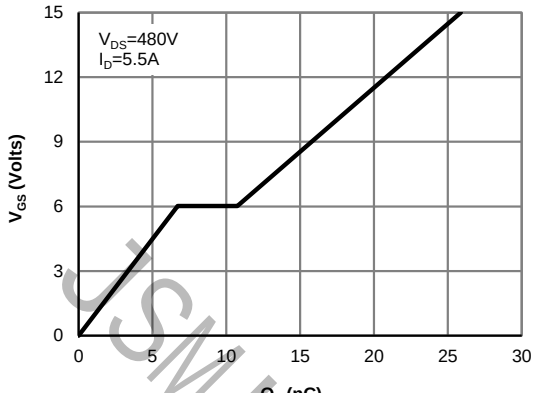

Figure 7: Gate-Charge Characteristics

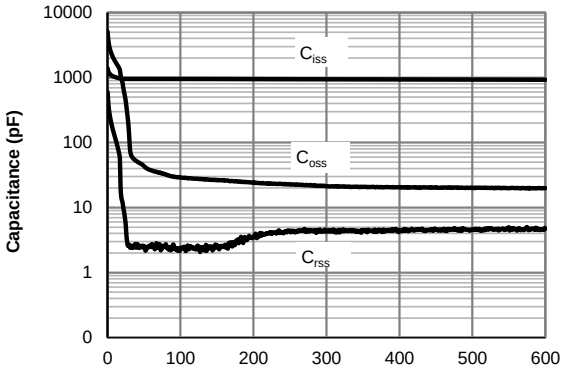

Figure 8: Capacitance Characteristics

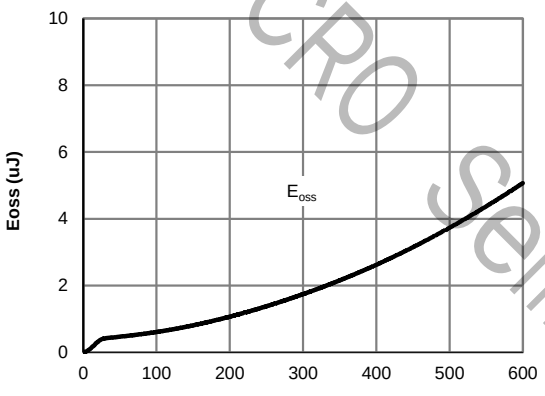

Figure 9: Coss stored Energy

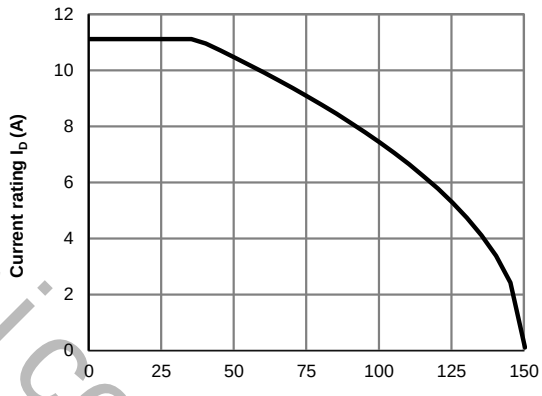

Figure 10: Current De-rating (Note F)

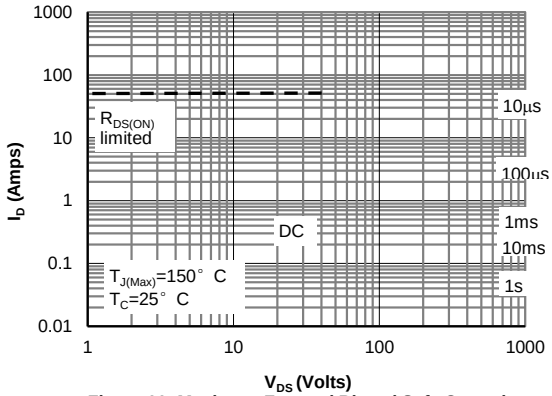

Figure 11: Maximum Forward Biased Safe Operating

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Typical Characteristics

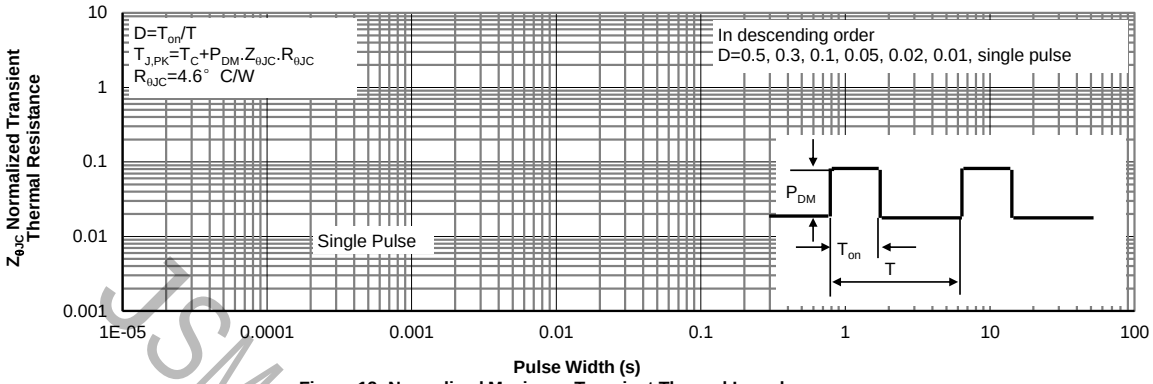

Figure 12: Normalized Maximum Transient Thermal Impedance

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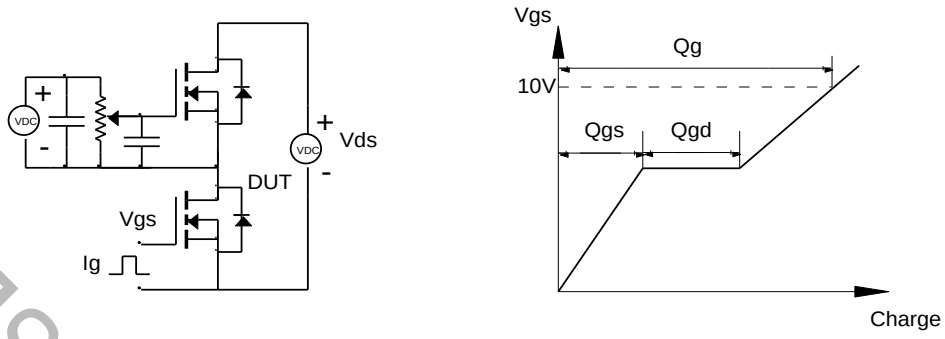
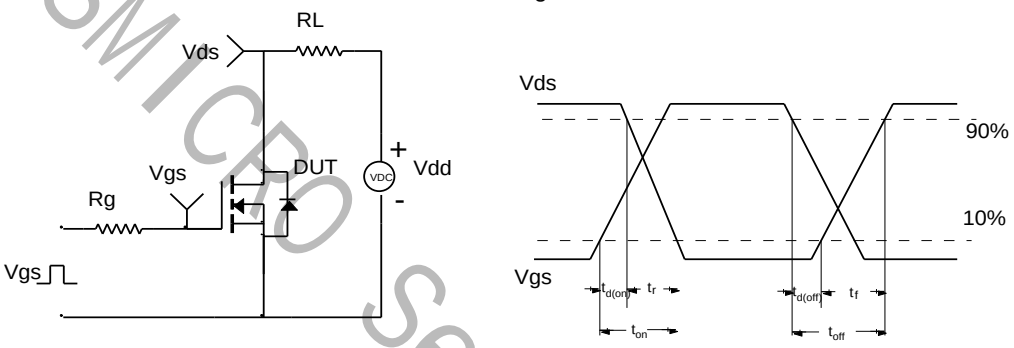
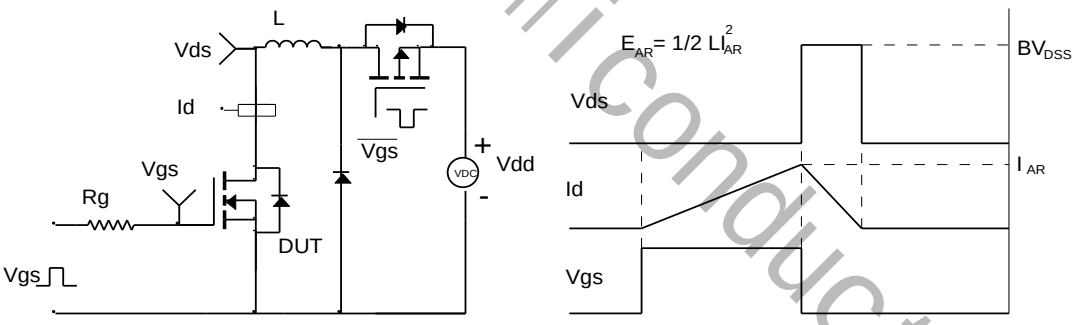
Gate Charge Test Circuit & Waveform



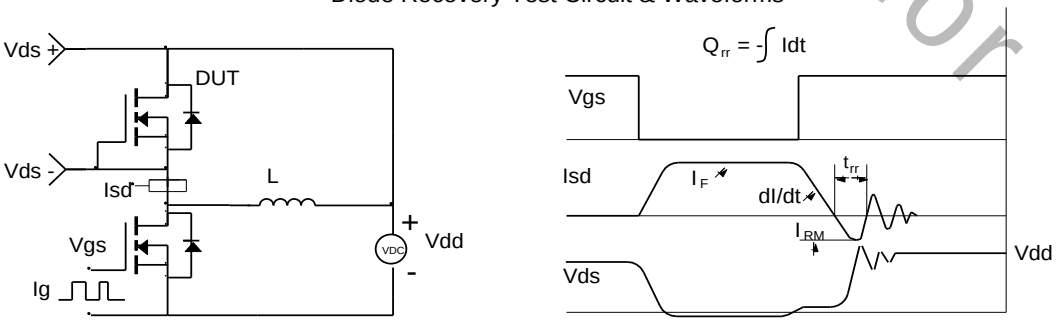
Resistive Switching Test Circuit & Waveforms



Unclamped Inductive Switching (UIS) Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms



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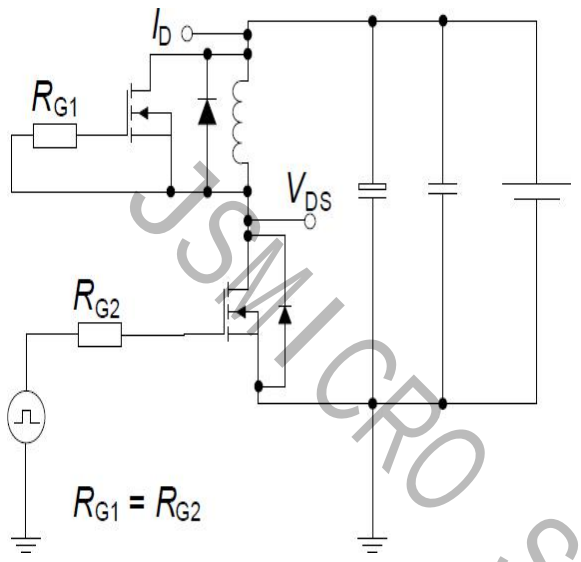
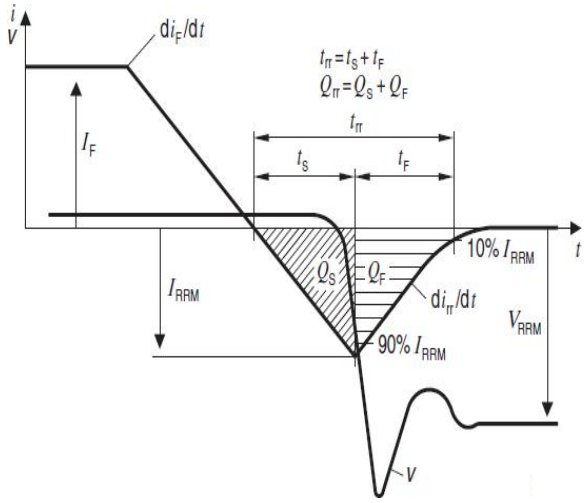
Typical Characteristics

Test circuit and waveform for diode characteristics

Test circuit for diode characteristics



Diode recovery waveform



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Package Dimension

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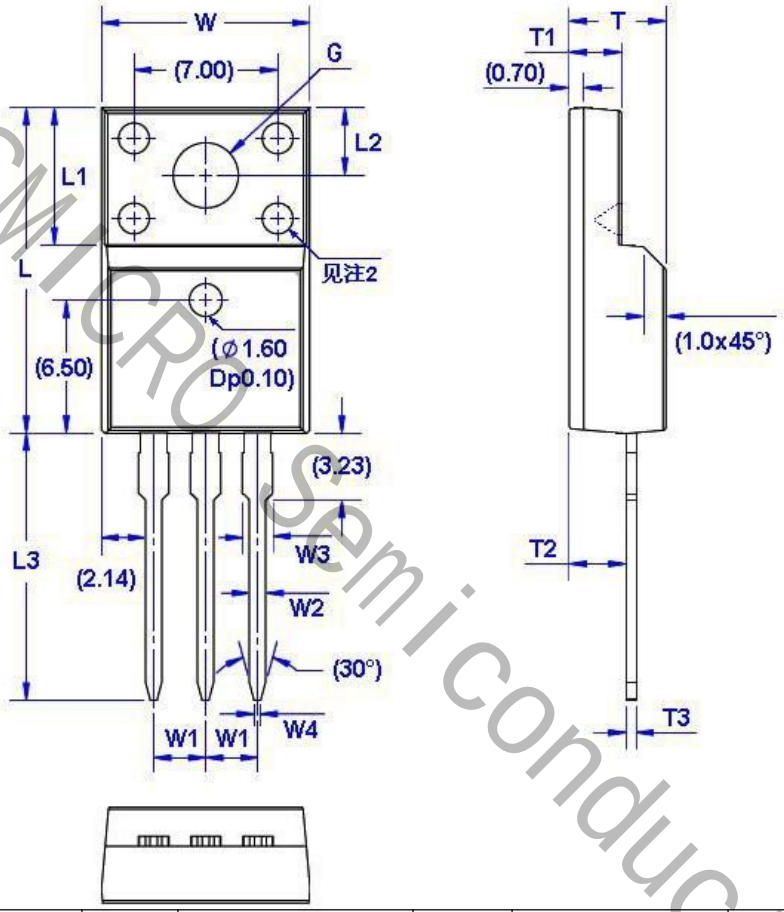
Unit: mm



Symbol	Size		Symbol	Size		Symbol	Size		Symbol	Size	
	Min	Max		Min	Max		Min	Max		Min	Max
W	9.96	10.36	W4	0.25	0.45	L3	12.78	13.18	T3	0.45	0.60
W1	2.54 (TYP)		L	15.67	16.07	T	4.50	4.90	G(Φ)	3.08	3.28
W2	0.70	0.90	L1	6.48	6.88	T1	2.34	2.74			
W3	1.24	1.47	L2	3.20	3.40	T2	2.56	2.96			

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