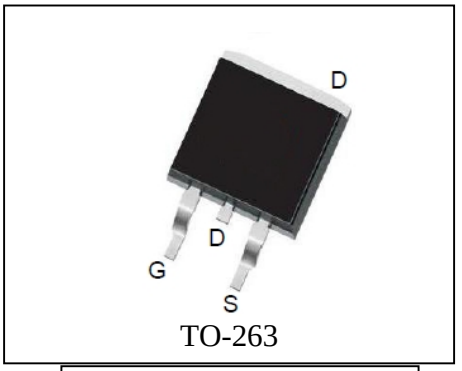
RU2H15S

N-Channel Advanced Power MOSFET

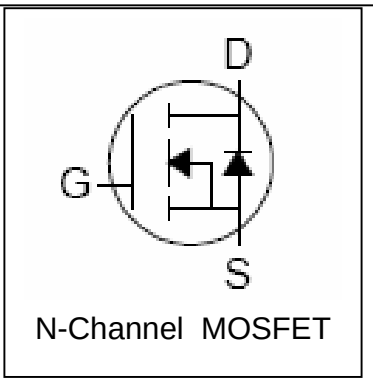
Features

- 200V/15A,
  $R_{DS(ON)}$ =200mΩ(tpy.)@V_{GS}=10V
- Super High Dense Cell Design
- Ultra Low On-Resistance
- 100% avalanche tested
- Lead Free and Green Devices Available
  (RoHS Compliant)

Pin Description



TO-263



N-Channel MOSFET

Applications

- High Frequency DC-DC Converters

Absolute Maximum Ratings

Symbol	Parameter		Rating	Unit
Common Ratings (T_C=25°C Unless Otherwise Noted)				
V_{DSS}	Drain-Source Voltage		200	V
V_{GSS}	Gate-Source Voltage		±20	
T_J	Maximum Junction Temperature		175	°C
T_{STG}	Storage Temperature Range		-55 to 175	°C
I_S	Diode Continuous Forward Current	T_C=25°C	15①	A
Mounted on Large Heat Sink				
I_{DP}	300μs Pulse Drain Current Tested	T_C=25°C	60②	A
I_D	Continuous Drain Current(V_{GS}=10V)	T_C=25°C	15①	A
		T_C=100°C	10	
P_D	Maximum Power Dissipation	T_C=25°C	83	W
		T_C=100°C	41	W
$R_{\theta JC}$	Thermal Resistance-Junction to Case		1.8	°C/W
Drain-Source Avalanche Ratings				
E_{AS}③	Avalanche Energy, Single Pulsed		23	mJ

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Electrical Characteristics (T_C=25°C Unless Otherwise Noted)

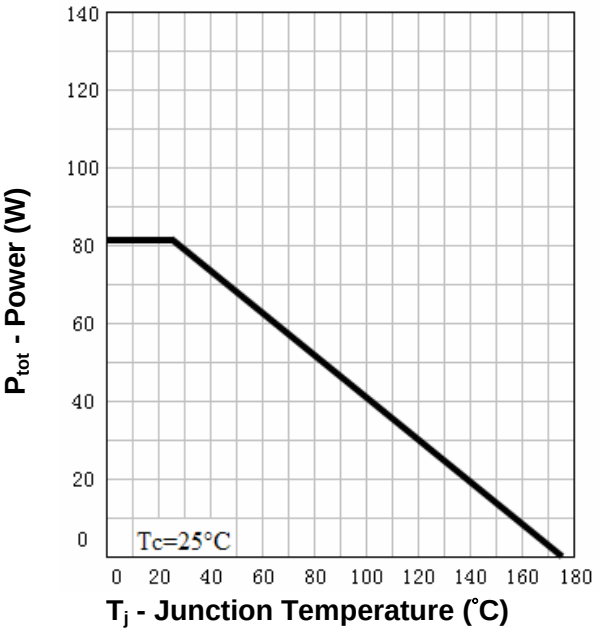
Symbol	Parameter	Test Condition	RU2H15S			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	V_{GS}=0V, I_{DS}=250μA	200			V
I_{DSS}	Zero Gate Voltage Drain Current	V_{DS}=200V, V_{GS}=0V			1	μA
		T_J=85°C			30	
$V_{GS(th)}$	Gate Threshold Voltage	V_{DS}=V_{GS}, I_{DS}=250μA	2	3	4	V
I_{GSS}	Gate Leakage Current	V_{GS}=±20V, V_{DS}=0V			±100	nA
$R_{DS(ON)}$ ④	Drain-Source On-state Resistance	V_{GS}=10V, I_{DS}=8A		200	250	mΩ
Diode Characteristics						
V_{SD} ④	Diode Forward Voltage	I_{SD}=15A, V_{GS}=0V			1.3	V
t_{rr}	Reverse Recovery Time	I_{SD}=15A, dI_{SD}/dt=100A/μs		107		ns
Q_{rr}	Reverse Recovery Charge			542		nC
Dynamic Characteristics ⑤						
R_G	Gate Resistance	V_{GS}=0V,V_{DS}=0V,F=1MHz		5.6		Ω
C_{iss}	Input Capacitance	V_{GS}=0V, V_{DS}=100V, Frequency=1.0MHz		670		pF
C_{oss}	Output Capacitance			115		
C_{rss}	Reverse Transfer Capacitance			40		
$t_{d(ON)}$	Turn-on Delay Time	V_{DD}=100V, R_L=6.7Ω, I_{DS}=15A, V_{GEN}=10V, R_G=4.7Ω		10		ns
t_r	Turn-on Rise Time			26		
$t_{d(OFF)}$	Turn-off Delay Time			31		
t_f	Turn-off Fall Time			13		
Gate Charge Characteristics ⑤						
Q_g	Total Gate Charge	V_{DS}=160V, V_{GS}=10V, I_{DS}=15A		33		nC
Q_{gs}	Gate-Source Charge			9		
Q_{gd}	Gate-Drain Charge			15		

Notes: ①Calculated continuous current based on maximum allowable junction temperature.
②Pulse width limited by safe operating area.
③Limited by T_{Jmax}, I_{AS} =3A, V_{DD} = 60V, R_G = 50Ω , Starting T_J = 25°C.
④Pulse test ; Pulse width≤300μs, duty cycle≤2%.
⑤Guaranteed by design, not subject to production testing.

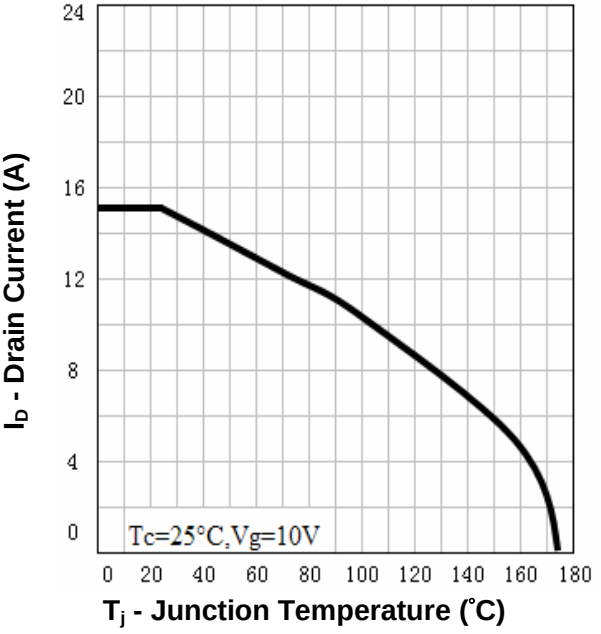
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Typical Characteristics

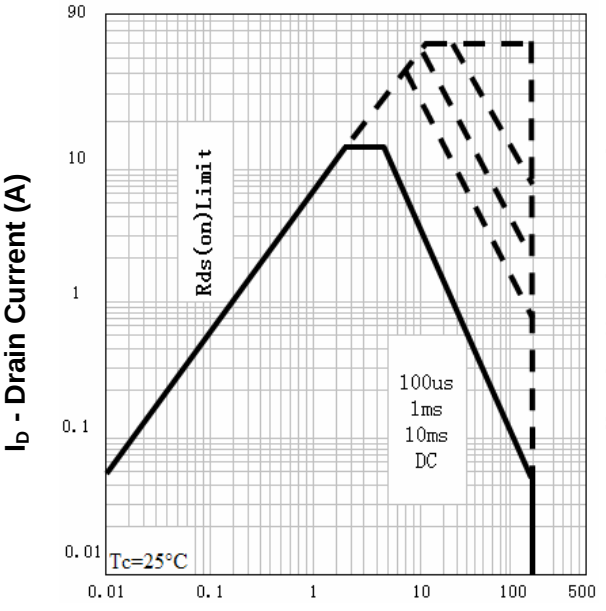
Power Dissipation



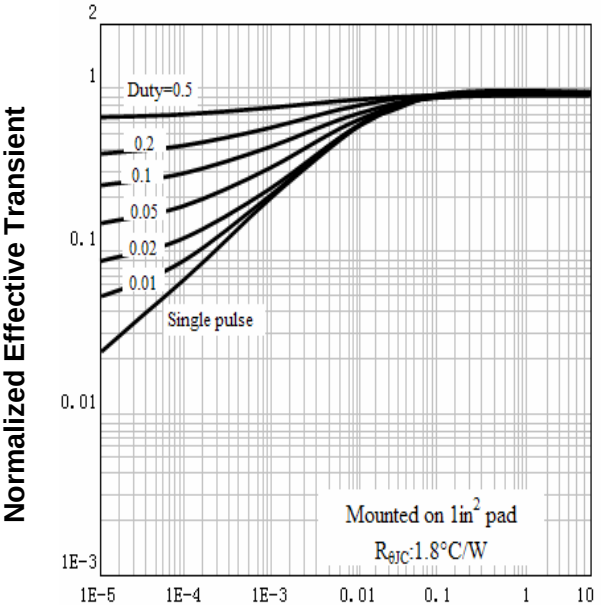
Drain Current



Safe Operation Area

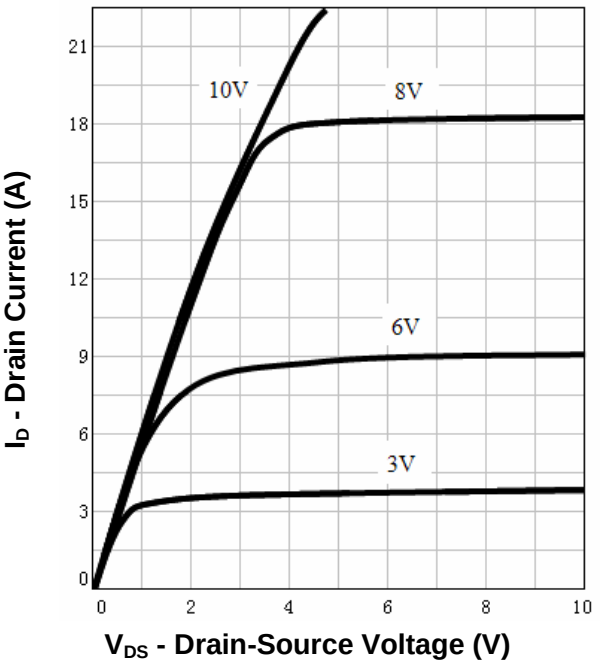


Thermal Transient Impedance

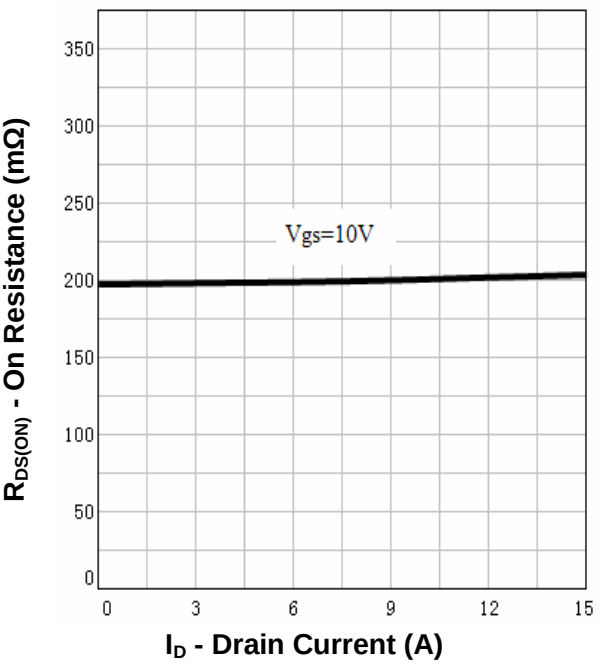


Typical Characteristics

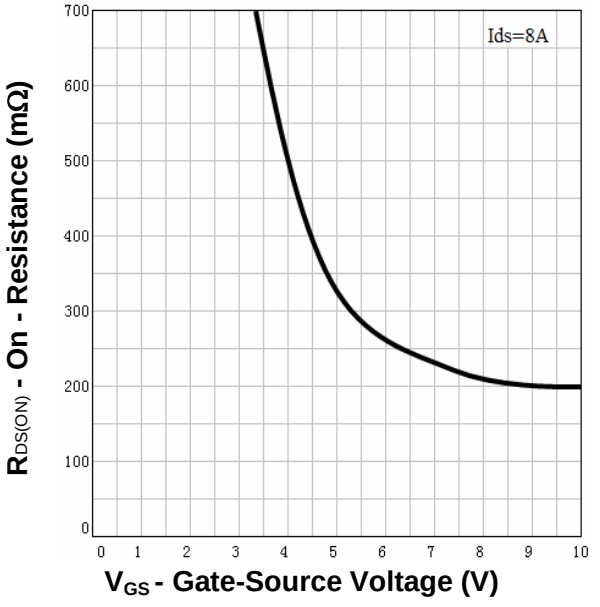
Output Characteristics



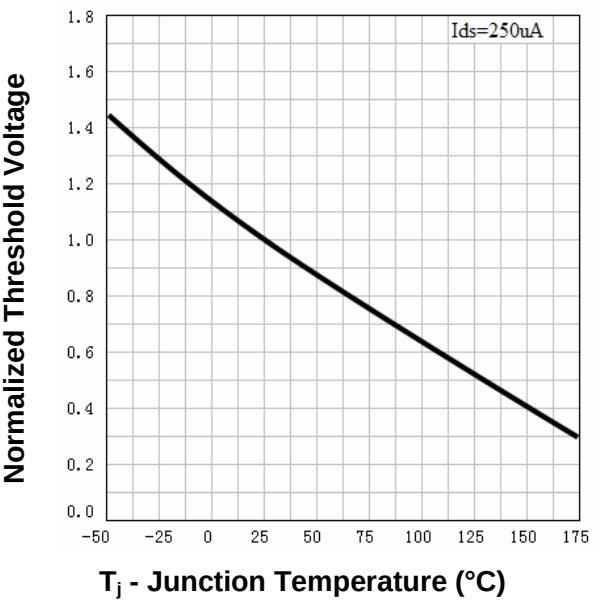
Drain-Source On Resistance



Drain-Source On Resistance

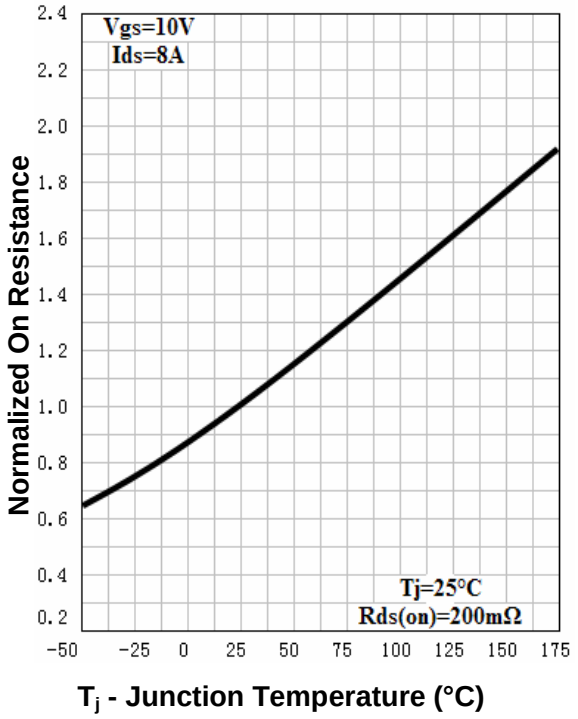


Gate Threshold Voltage

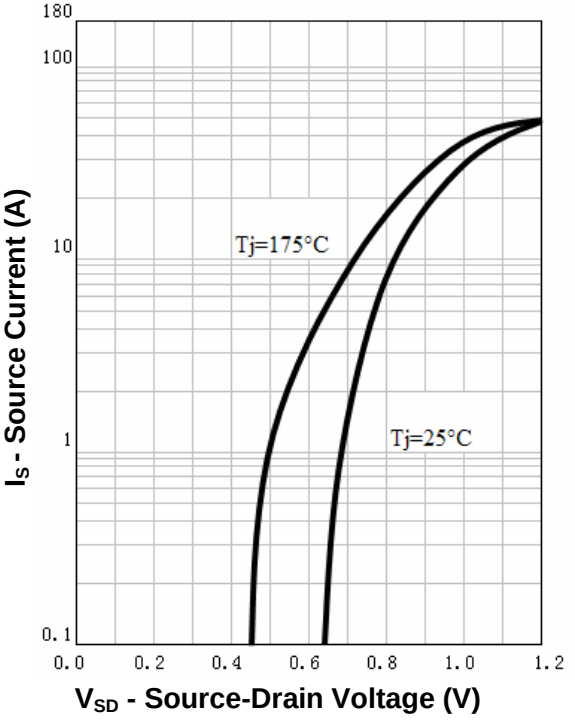


Typical Characteristics

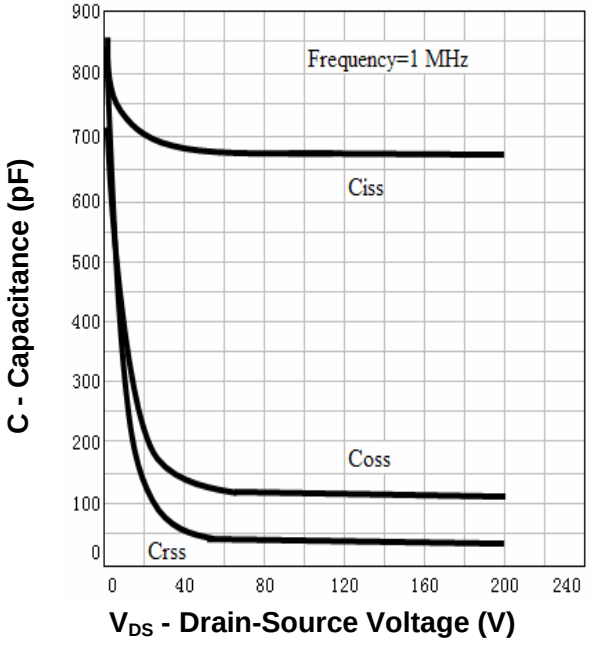
Drain-Source On Resistance



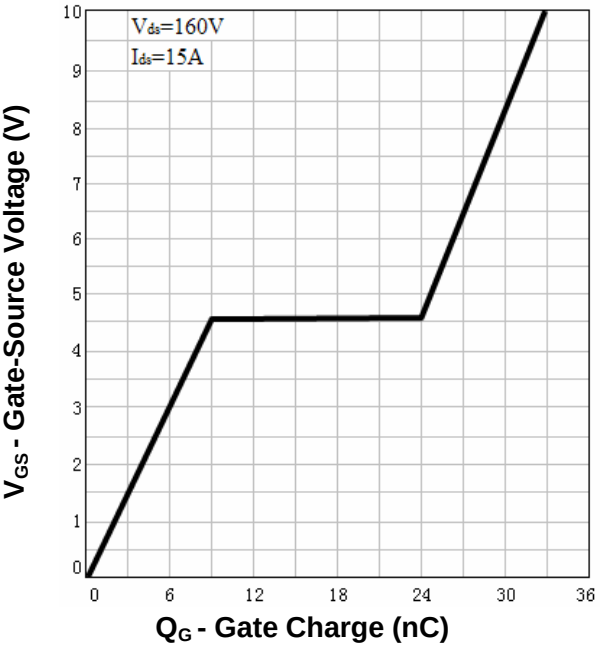
Source-Drain Diode Forward



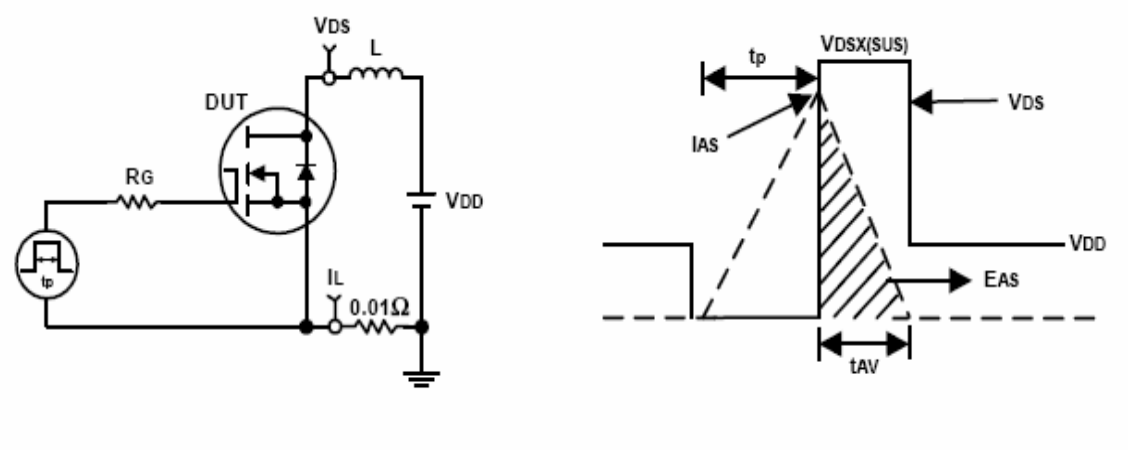
Capacitance



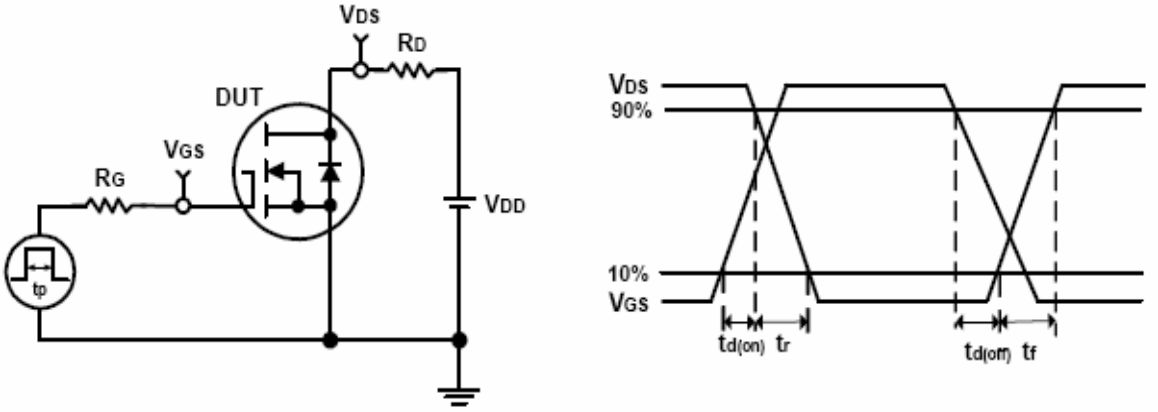
Gate Charge



Avalanche Test Circuit and Waveforms



Switching Time Test Circuit and Waveforms

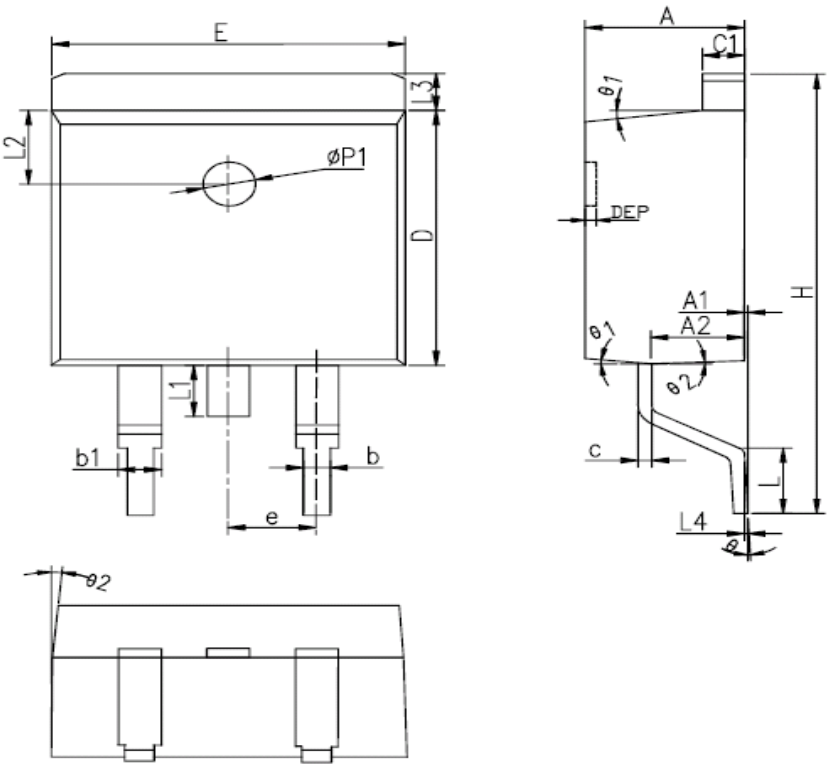


Ordering and Marking Information

Device	Marking	Package	Packaging	Quantity	Reel Size	Tape width
RU2H15S	RU2H15S	TO-263	Tube	50	-	-

Package Information

TO-263-2L



SYMBOL	MM			INCH			SYMBOL	MM			INCH		
	MIN	NOM	MAX	MIN	NOM	MAX		MIN	NOM	MAX	MIN	NOM	MAX
A	4.40	4.57	4.70	0.173	0.180	0.185	L	2.00	2.30	2.60	0.079	0.090	0.102
A1	0	0.10	0.25	0	0.004	0.010	L3	1.17	1.27	1.40	0.046	0.050	0.055
A2	2.59	2.69	2.79	0.102	0.106	0.110	L1	-	-	1.70	-	-	0.067
b	0.77	-	0.90	0.030	-	0.035	L4	0.25BSC			0.01BSC		
b1	1.23	-	1.36	0.048	-	0.052	L2	2.50REF.			0.098REF.		
c	0.34	-	0.47	0.013	-	0.019	θ	0°	-	8°	0°	-	8°
C1	1.22	-	1.32	0.048	-	0.052	θ 1	5°	7°	9°	5°	7°	9°
D	8.60	8.70	8.80	0.338	0.343	0.346	θ 2	1°	3°	5°	1°	3°	5°
E	10.00	10.16	10.26	0.394	0.4	0.404	DEP	0.05	0.10	0.20	0.002	0.004	0.008
e	2.54BSC			0.1BSC			Øp1	1.40	1.50	1.60	0.055	0.059	0.063
H	14.70	15.10	15.50	0.579	0.594	0.610							

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DO NOT INCLUDE MOLD FLASH OR PROTRUSIONS

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