

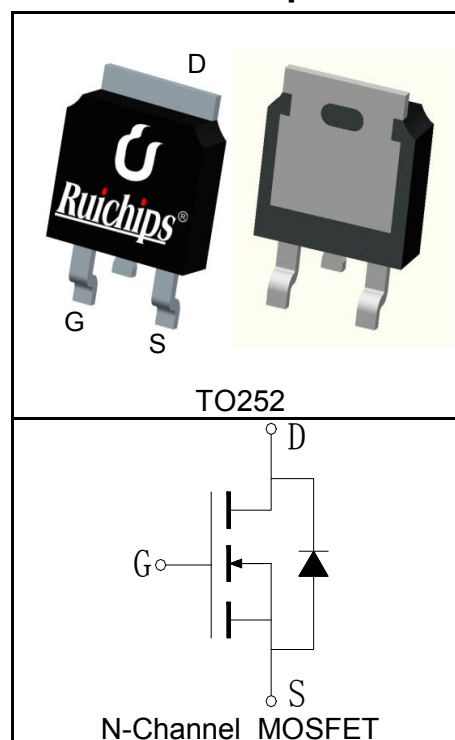
Features

- 60V/70A,
 $R_{DS(ON)} = 6.8m\Omega(Typ.)@V_{GS}=10V$
- Super High Dense Cell Design
- Ultra Low On-Resistance
- 100% avalanche tested
- Lead Free and Green Devices Available (RoHS Compliant)

Applications

- Power Management.
- Switch Applications.
- Load switch

Pin Description



Absolute Maximum Ratings

Symbol	Parameter	Rating	Unit
Common Ratings ($T_C=25^\circ\text{C}$ Unless Otherwise Noted)			
V_{DSS}	Drain-Source Voltage	60	V
V_{GSS}	Gate-Source Voltage	± 25	
T_J	Maximum Junction Temperature	175	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to 175	$^\circ\text{C}$
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$ 60	A
Mounted on Large Heat Sink			
$I_{DP}^{①}$	300 μs Pulse Drain Current Tested	$T_C=25^\circ\text{C}$ 280	A
$I_D^{②}$	Continuous Drain Current($V_{GS}=10V$)	$T_C=25^\circ\text{C}$ 70	A
		$T_C=100^\circ\text{C}$ 49	
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ 107	W
		$T_C=100^\circ\text{C}$ 53.5	
$R_{\theta JC}$	Thermal Resistance-Junction to Case	1.4	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance-Junction to Ambient	100	$^\circ\text{C}/\text{W}$
Drain-Source Avalanche Ratings			
$E_{AS}^{③}$	Avalanche Energy, Single Pulsed	225	mJ

Electrical Characteristics ($T_C=25^{\circ}\text{C}$ Unless Otherwise Noted)

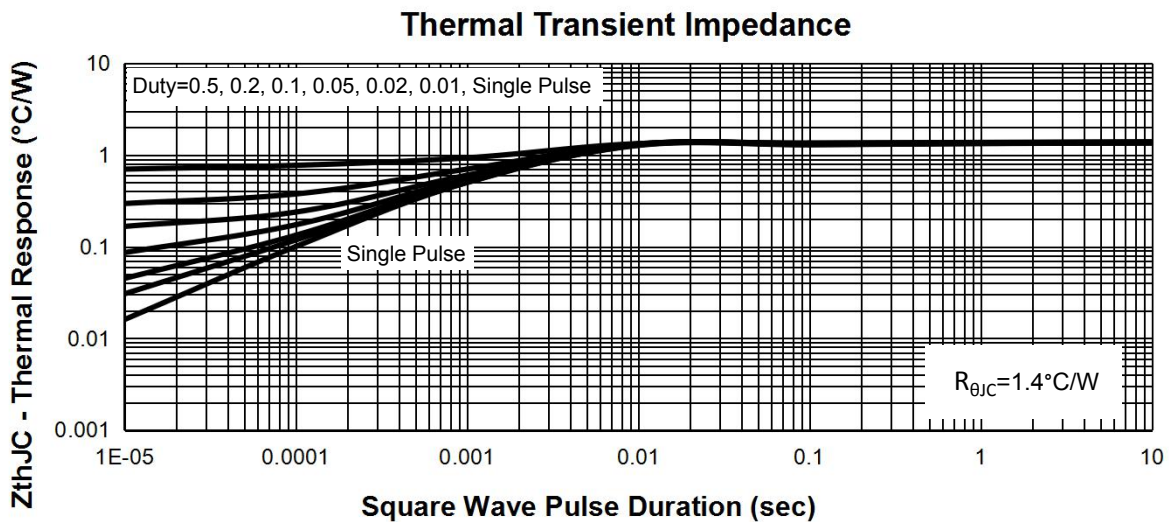
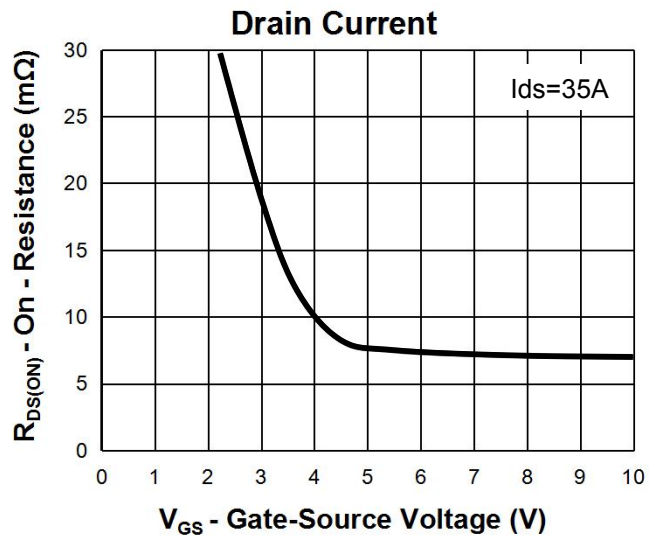
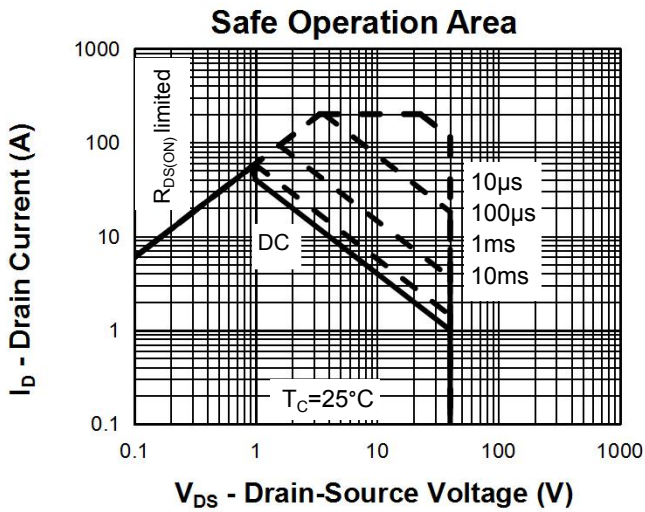
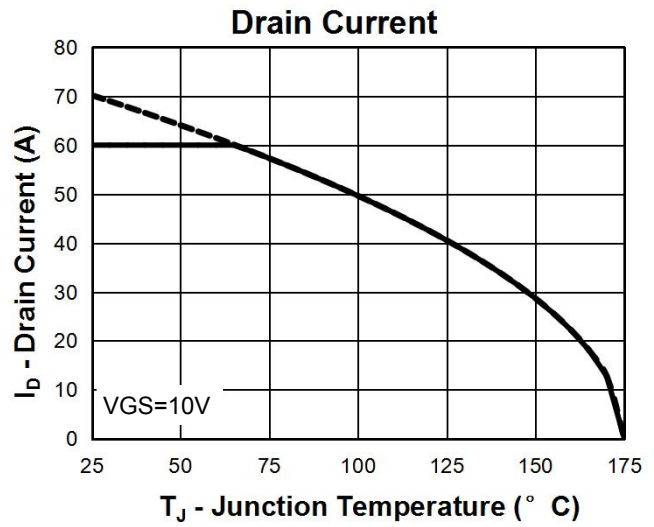
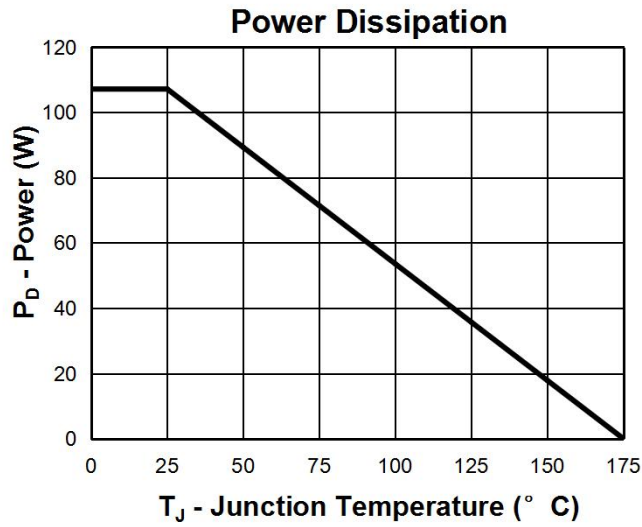
Symbol	Parameter	Test Condition	RU6070L-A			Unit
			Min.	Typ.	Max.	
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS}=0V, I_{DS}=250\mu A$	60			V
I_{DSS}	Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V$			1	μA
		$T_J=125^{\circ}\text{C}$			30	
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	2		4	V
I_{GSS}	Gate Leakage Current	$V_{GS}=\pm 25V, V_{DS}=0V$			± 100	nA
$R_{DS(ON)}^{(4)}$	Drain-Source On-state Resistance	$V_{GS}=10V, I_{DS}=35A$		6.8	7.5	m Ω
Diode Characteristics						
$V_{SD}^{(4)}$	Diode Forward Voltage	$I_{SD}=35A, V_{GS}=0V$			1.2	V
t_{rr}	Reverse Recovery Time	$I_{SD}=35A, dI_{SD}/dt=100A/\mu s$		46		ns
Q_{rr}	Reverse Recovery Charge			91		nC
Dynamic Characteristics ⁽⁵⁾						
R_G	Gate Resistance	$V_{GS}=0V, V_{DS}=0V, F=1\text{MHz}$		1.4		Ω
C_{iss}	Input Capacitance	$V_{GS}=0V,$ $V_{DS}=30V,$ Frequency=1.0MHz		3450		pF
C_{oss}	Output Capacitance			420		
C_{riss}	Reverse Transfer Capacitance			180		
$t_{d(ON)}$	Turn-on Delay Time	$V_{DD}=30V, I_{DS}=35A,$ $V_{GEN}=10V, R_G=0.5\Omega$		11		ns
t_r	Turn-on Rise Time			33		
$t_{d(OFF)}$	Turn-off Delay Time			41		
t_f	Turn-off Fall Time			35		
Gate Charge Characteristics ⁽⁵⁾						
Q_g	Total Gate Charge	$V_{DS}=48V, V_{GS}=10V,$ $I_{DS}=30A$		45		nC
Q_{gs}	Gate-Source Charge			12		
Q_{gd}	Gate-Drain Charge			16		

- Notes:
- ①Pulse width limited by safe operating area.
 - ②Calculated continuous current based on maximum allowable junction temperature.
 - ③Limited by T_{Jmax} , $I_{AS}=30A$, $V_{DD}=48V$, $R_G=50\Omega$, Starting $T_J=25^{\circ}\text{C}$.
 - ④Pulse test; Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.
 - ⑤Guaranteed by design, not subject to production testing.

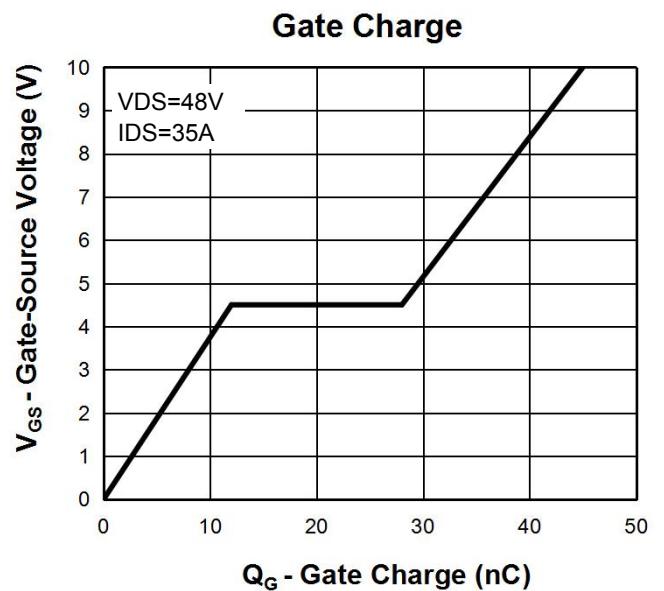
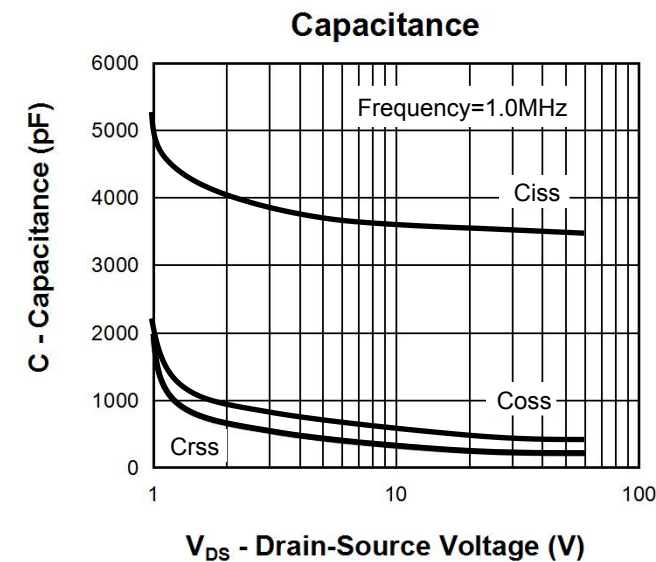
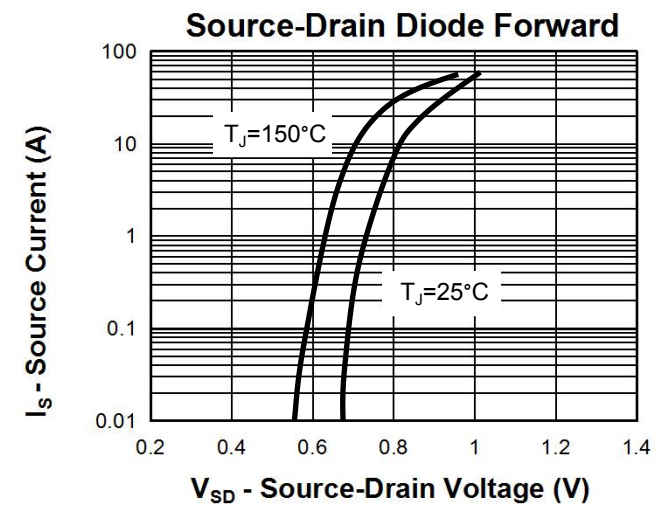
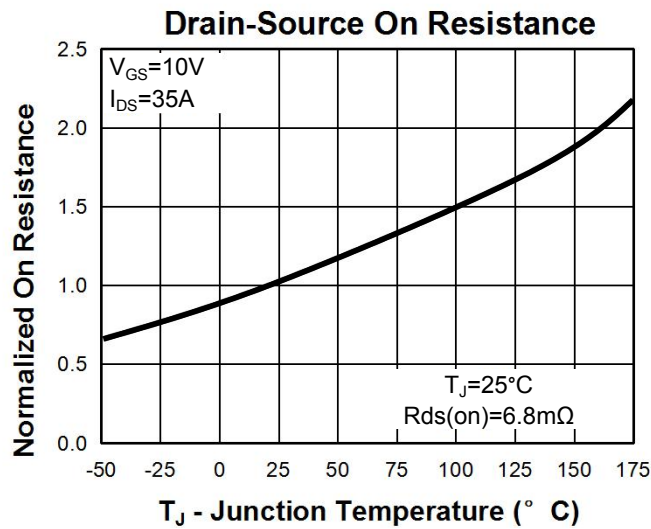
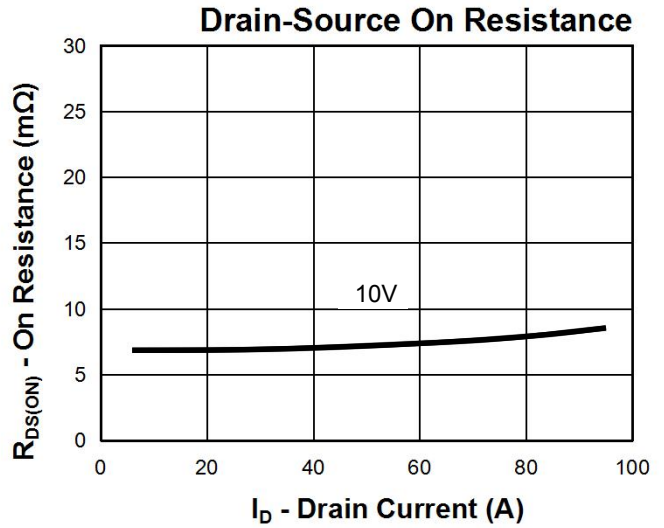
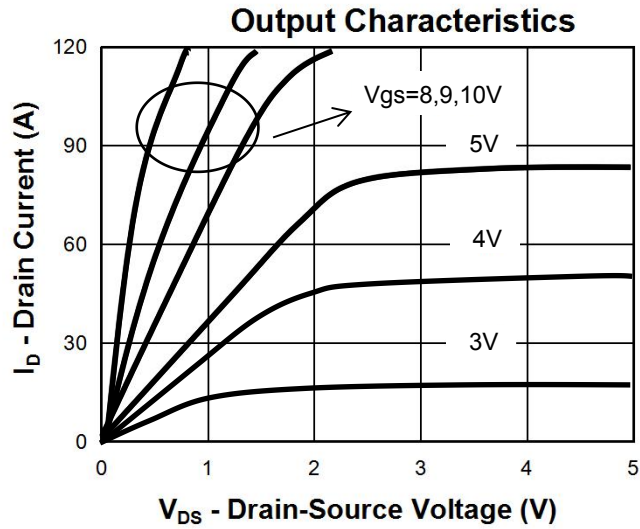
Ordering and Marking Information

Device	Marking	Package	Packaging	Quantity	Reel Size	Tape width
RU6070L-A	RU6070L-A	TO252	Tape&Reel	2500	13"	16mm

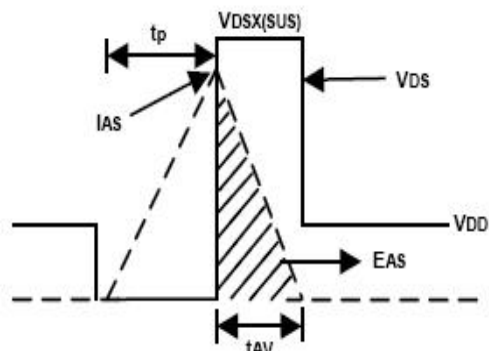
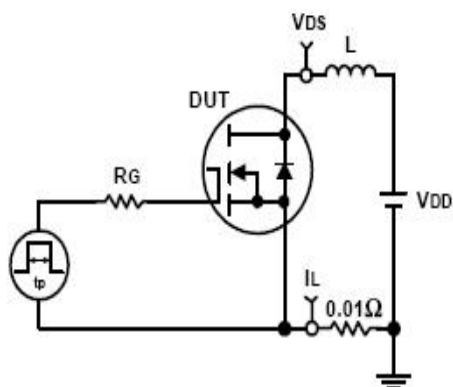
Typical Characteristics



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Avalanche Test Circuit and Waveforms



Switching Time Test Circuit and Waveforms

