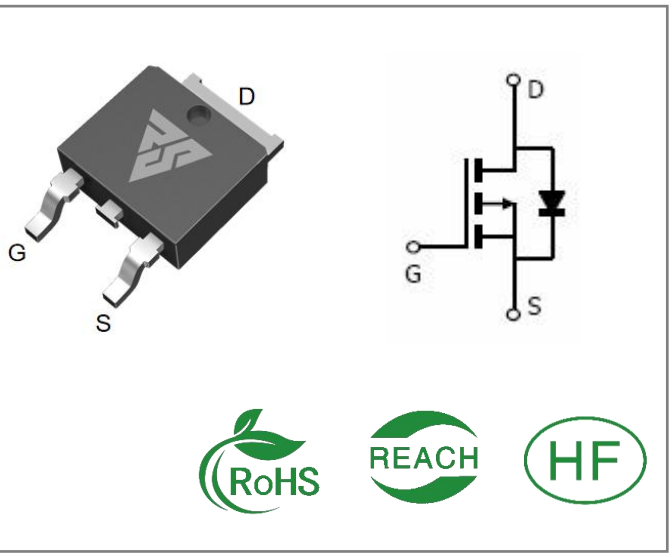
ID	R_{DS}(ON)(Typ)	VDSS
-65A	7.1mΩ	-30V



Applications:
- Load Switch
- PWM Applications
- Power Managment

Features:
- Fast switching speed
- 100% avalanche tested
- Improved dv/dt capability

Ordering Information

Part Number	Package	Marking	Packing	Qty.
RS30P65D	TO-252	RS30P65D	Tape&reel	2500 PCS

Absolute Maximun Ratings Tc= 2 5℃ unless otherwise specified

Symbol	Parameter	RS30P65D	Units
VDSS	Drain-to-Source Voltage	-30	V
ID	Continuous Drain Current TC=25℃	-65	A
ID	Continuous Drain Current TC=100℃	-45	
IDM	Pulsed Drain Current (Note*1)	-260	
PD	Power Dissipation	83	W
VGS	Gate- to- Source Voltage	±25	V
EAS	Avalanche Engergy VG=-10V, VDD =30V, RG = 25 Ω,TC=25℃	500	mJ
TL TPKG	Maximum Temperature for Soldering	300 260	℃
	Leads at 0.063in(1.6mm)from Case for 10 seconds Package Body for 10 seconds		
TJ and TSTG	Operating Junction and Storage Temperature Range	-55 to 175	
ESD	HBN JESD22-A114	1000	V
	CDM JESD22-C101	1000	V

* Drain Current Limited by Maximum Junction Temperature

Caution: Stresses greater than those listed in the“ Absolute Maximum Ratings” Table may cause permanent damage to the device.

Thermal Resistance

Symbol	Parameter	RS30P65D	Units	Test Conditions
RθJC	Junction-to-Case	1.8	℃/ W	Drain lead soldered to water cooled heatsink, PD adjusted for a peak junction temperature of + 1 5 0 ℃

OFF Characteristics TJ= 25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
BVDSS	Drain- to- source Breakdown Voltage	-30	--	--	V	VGS=0V ID=250μA
IDSS	Drain- to- Source Leakage Current	--	--	-1	μA	VDS=-30V VGS=0V
IGSS	Gate- to- Source Forward Leakage	--	--	100	nA	VGS=25V VDS=0V
	Gate- to- Source Reverse Leakage	--	--	-100		VGS=-25V VDS=0V
GFS	Forward Transconductance	20	28	--	S	VDS=-5V ID=-10A

ON Characteristics TJ=25℃ unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
RDS(on)	Static Drain- to- Source On-Resistance(Note*2)	--	7.1	9.2	mΩ	VGS=-10V ID=-20A
		--	10	16	mΩ	VGS=-5V ID=-15A
VGS (TH)	Gate Threshold Voltage	-1.0	-1.8	-3	V	VGS=VDS ID=250μA

Resistive Switching Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
td(ON)	Turn- on Delay Time	--	16	--	nS	VDS=-15V VGS=-10V ID=-1A RG=2.5Ω
trise	Rise Time	--	14	--		
td(OFF)	Turn- OFF Delay Time	--	50	--		
tfall	Fall Time	--	22	--		

Dynamic Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
Ciss	Input Capacitance	--	3570	--	pF	VGS=0V VDS=-15V f=1MHz
Coss	Output Capacitance	--	435	--		
Crss	Reverse Transfer Capacitance	--	175	--		
Qg	Total Gate Charge	--	58	--	nC	VDS=-15V ID=-10A VGS=-10V
Qgs	Gate- to- Source Charge	--	9	--		
Qgd	Gate-to-Drain(" Miller") Charge	--	14	--		

Source- Drain Diode Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
ISD	Source-Drain Current(BodyDiode)	--	--	-50	A	Integral pn- diode in MOSFET
VSD	Diode Forward Voltage	--	--	-1.2	V	IS=-10A,VGS=0V

Notes:

* 1. Repetitive rating, pulse width limited by maximum junction temperature.
* 2. Pulse Test: Pulse width ≤ 300μs, Duty Cycle ≤ 0.5%

Typical Feature Curve

Figure1. Power Dissipation

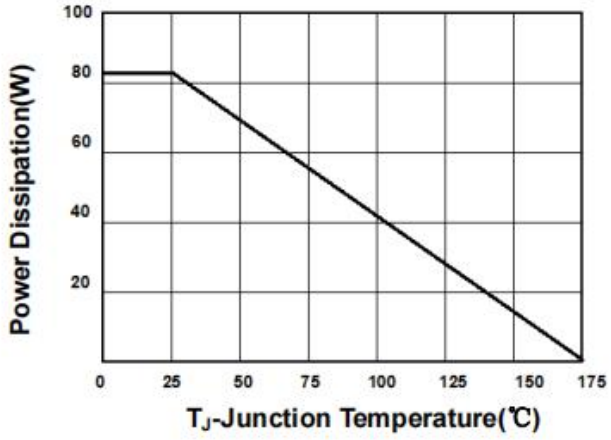


Figure2. Drain Current

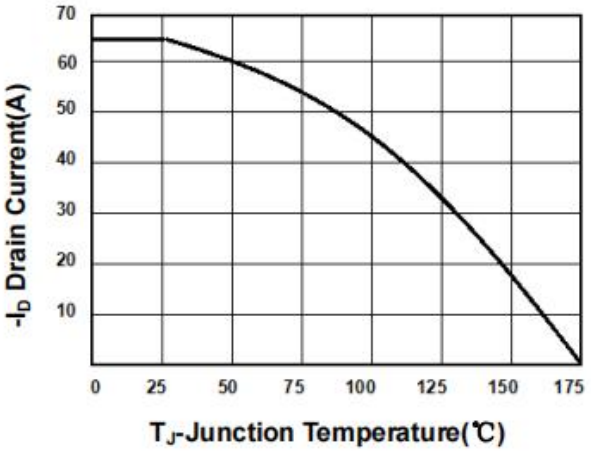


Figure3. Output Characteristics

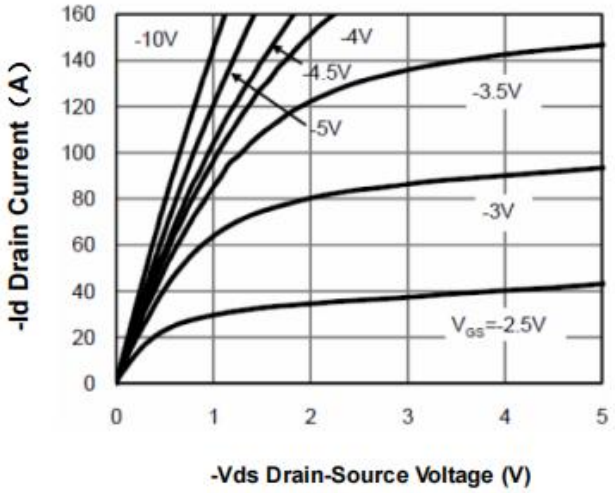


Figure4. Transfer Characteristics

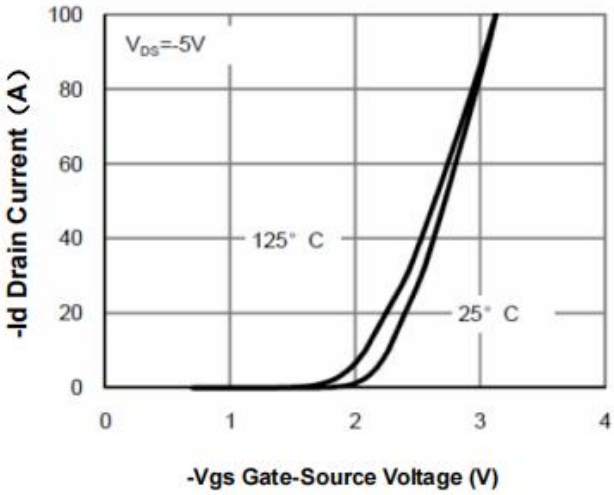


Figure5. Capacitance

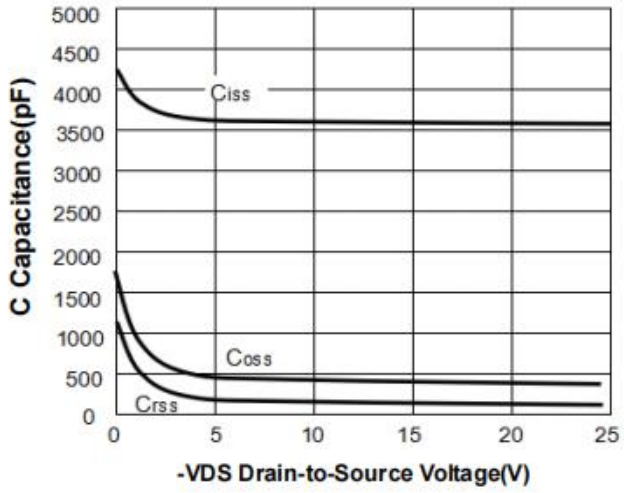


Figure6. $R_{DS(ON)}$ vs Junction Temperature

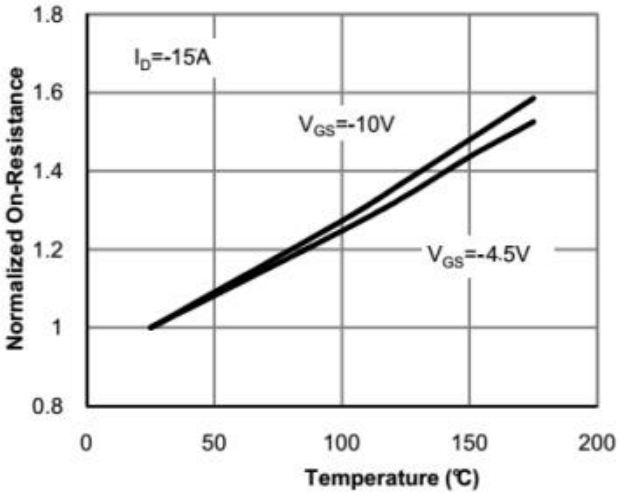


Figure7. Max BV_{DSS} vs Junction Temperature

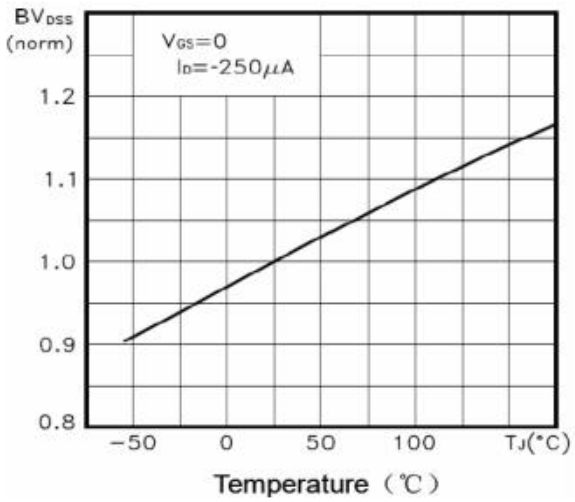


Figure8. $V_{GS(th)}$ vs Junction Temperature

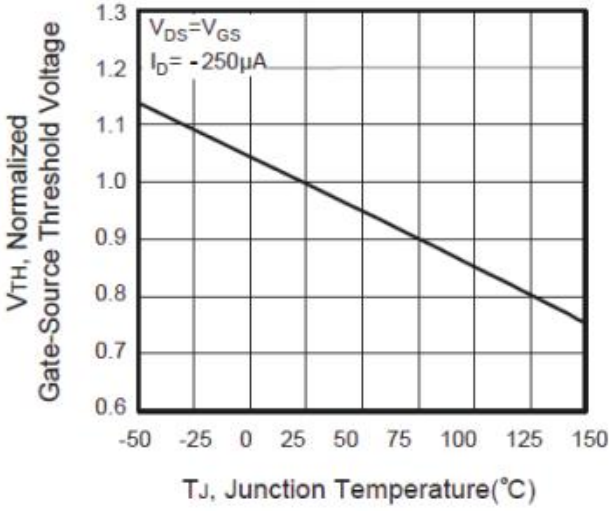


Figure9. Gate Charge Waveforms

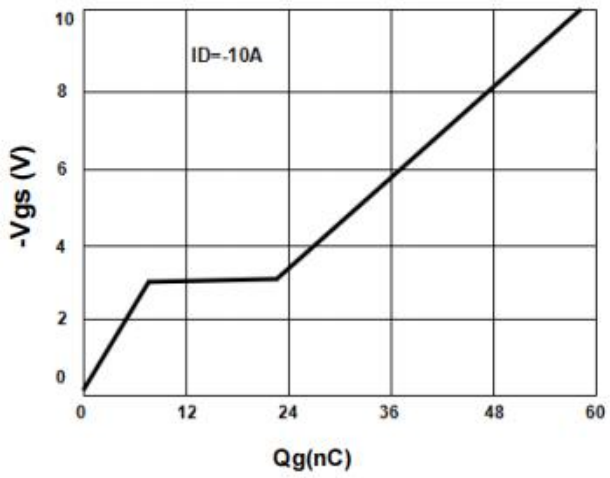


Figure10. Maximum Safe Operating Area

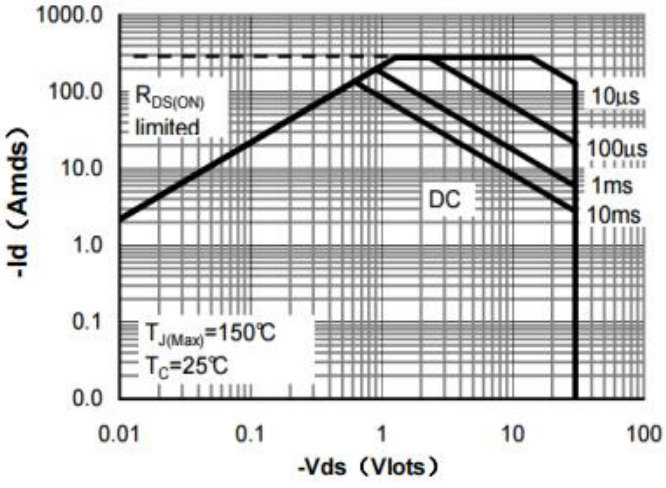
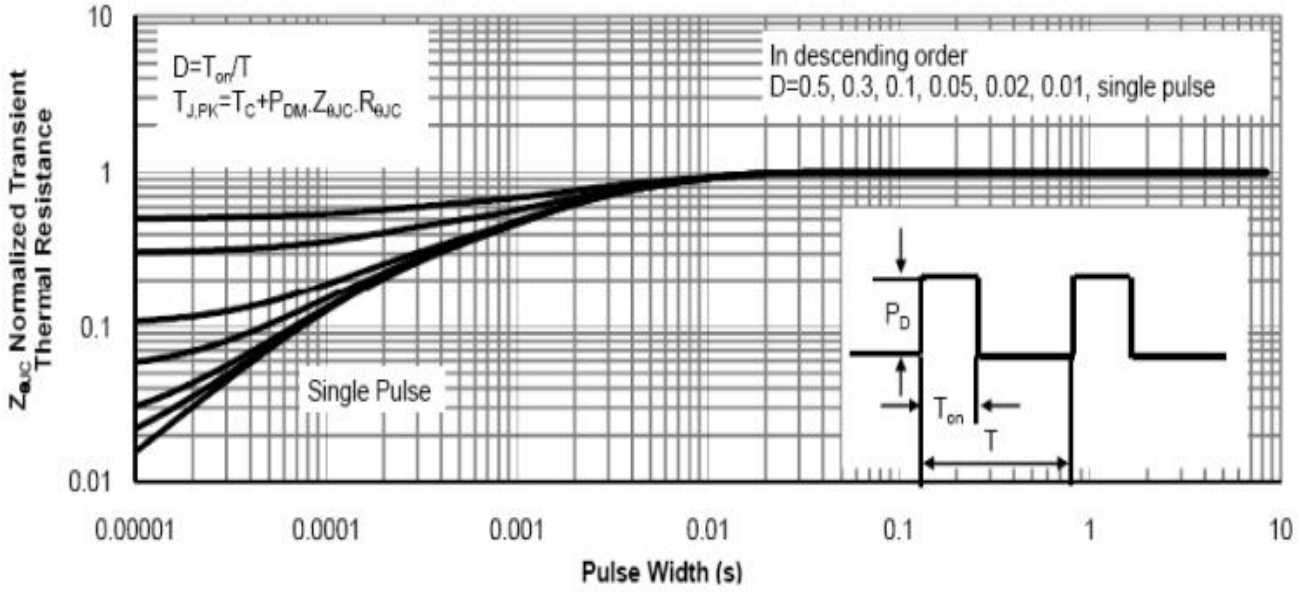
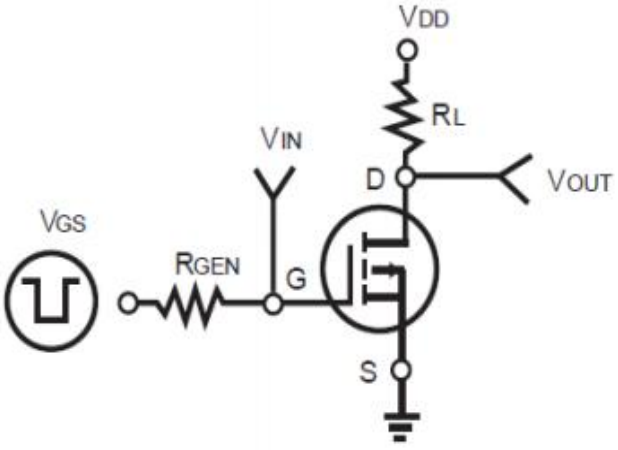
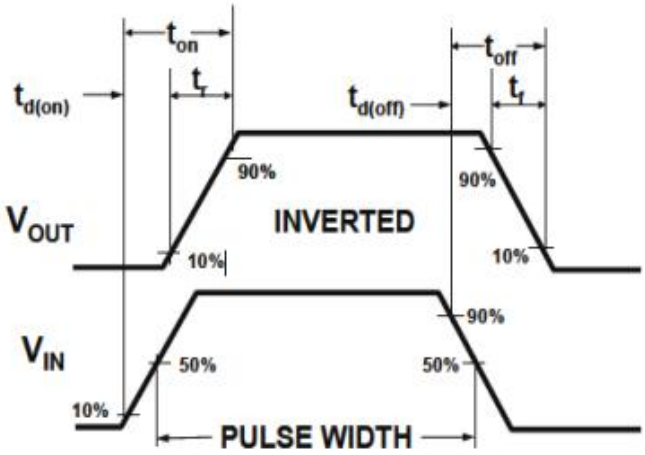


Figure11. Normalized Maximum Transient Thermal Impedance

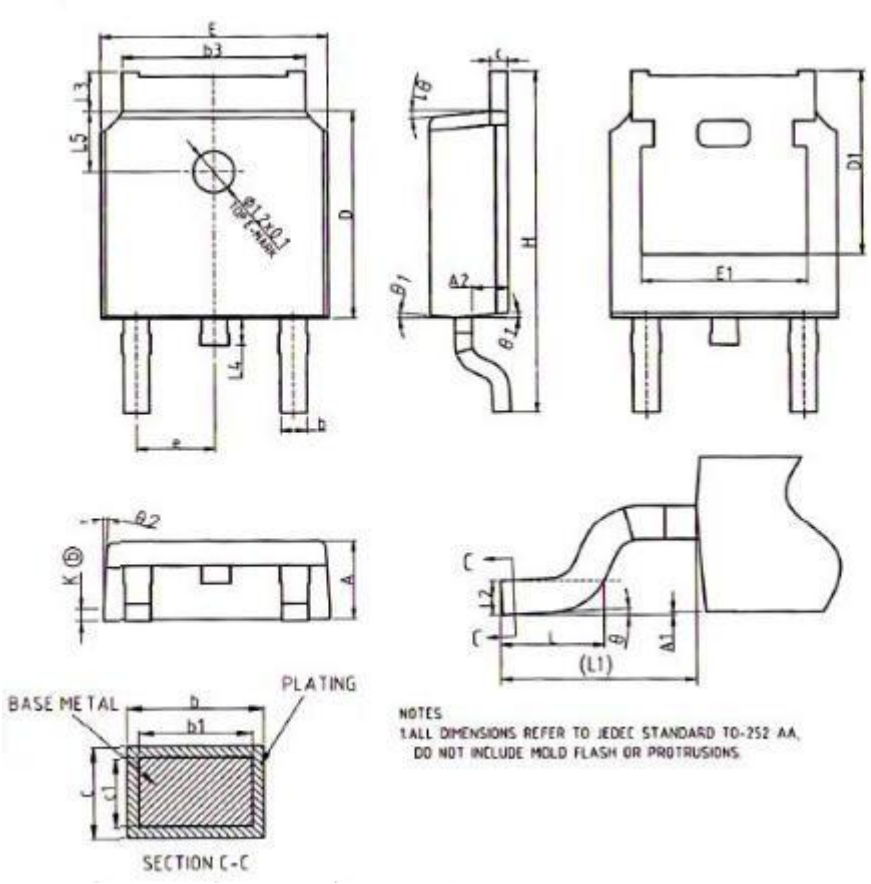


Test Circuits and Waveforms





Package outline drawing(TO-252 Unit: mm)



COMMON DIMENSIONS			
SYMBOL	mm		
	MIN	NOM	MAX
A	2.20	2.30	2.38
A1	0.00	-	0.10
A2	0.97	1.07	1.17
b	0.72	0.78	0.85
b1	0.71	0.76	0.81
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	9.90	10.10	10.30
L	1.40	1.50	1.70
L1		2.90REF	
L2		0.51BSC	
L3	0.90	-	1.25
L4	0.60	0.80	1.00
L5	1.70	1.80	1.90
θ	0°	-	8°
θ1	5°	7°	9°
θ2	5°	7°	9°
K		0.40REF	

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