

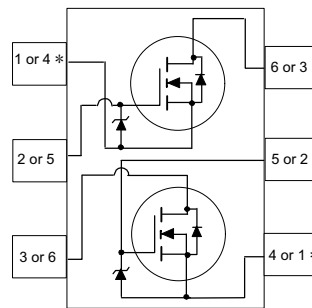
N-Channel Enhancement Mode Power MOSFET

Description

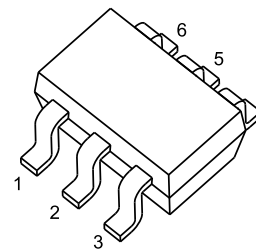
The RMD1N25ES9 uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. The complementary MOSFETs may be used to form a level shifted high side switch, and for a host of other applications.

General Features

- $V_{DS} = 25V, I_D = 1.1A$
 $R_{DS(ON)} < 550 m\Omega @ V_{GS}=4.5V$
 $R_{DS(ON)} < 650 m\Omega @ V_{GS}=2.5V$
- High power and current handling capability
- Lead free product is acquired
- Surface mount package
- Halogen-free
- P/N suffix V means AEC-Q101 qualified, e.g:RMD1N25ES9V



Top View



SOT-363

Package Marking and Ordering Information

Device Marking	Device	Device Package	Reel Size	Tape width	Quantity
1N25	RMD1N25ES9	SOT-363	Ø180mm	8mm	3000units

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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	25	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	1.1	A
Pulsed Drain Current ^(Note 1)	I_{DM}	5	A
Maximum Power Dissipation	P_D	0.8	W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 To 150	$^\circ C$

Thermal Characteristic

Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	156	$^\circ C/W$
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Electrical Characteristics ($T_A = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

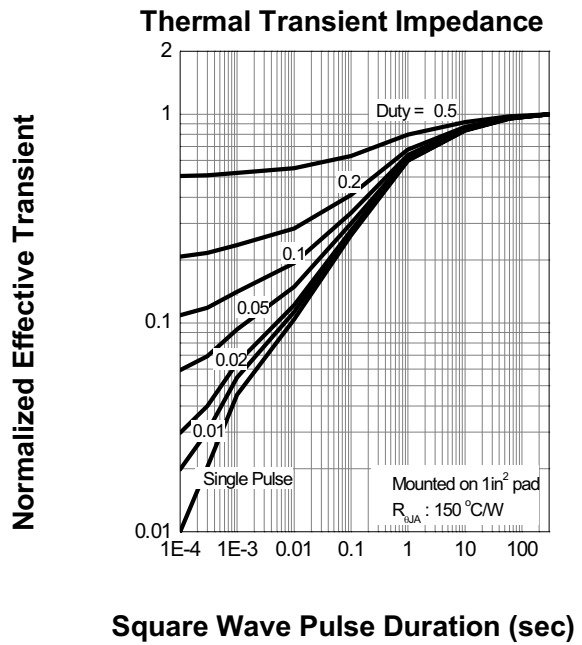
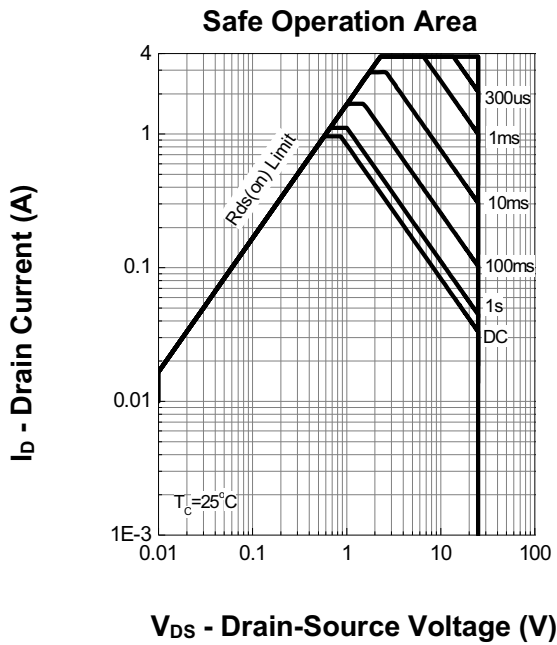
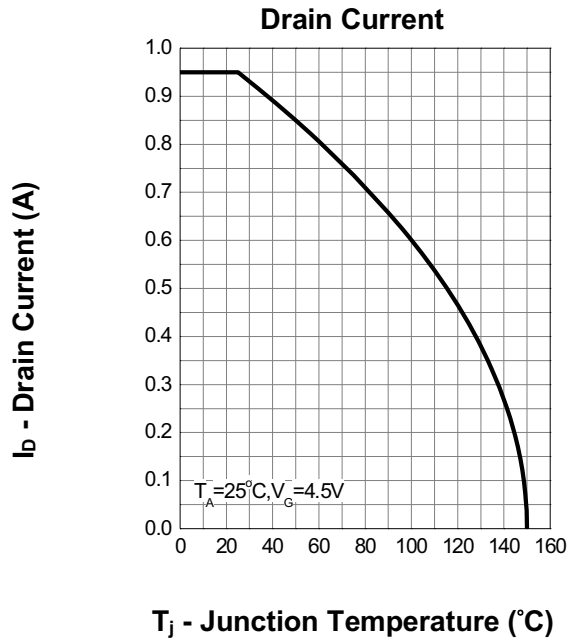
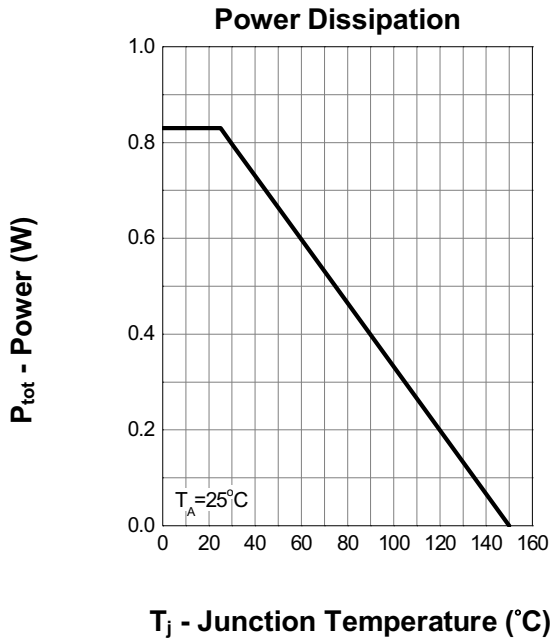
Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Static Characteristics						
BV_{DSS}	Drain-Source Breakdown Voltage	$V_{GS} = 0\text{ V}, I_{DS} = 250\text{ }\mu\text{A}$	25	-	-	V
$V_{GS(th)}$	Gate Threshold Voltage	$V_{DS} = V_{GS}, I_{DS} = 250\text{ }\mu\text{A}$	0.4	0.7	1.1	V
I_{DSS}	Drain Leakage Current	$V_{DS} = 25\text{ V}, V_{GS} = 0\text{ V}$	-	-	1	μA
		$T_J = 85\text{ }^\circ\text{C}$	-	-	30	μA
I_{GSS}	Gate Leakage Current	$V_{GS} = \pm 10\text{ V}, V_{DS} = 0\text{ V}$	-	-	± 10	μA
$R_{DS(on)}^a$	On-State Resistance	$V_{GS} = 4.5\text{ V}, I_{DS} = 0.5\text{ A}$	-	0.5	0.6	Ω
		$V_{GS} = 2.5\text{ V}, I_{DS} = 0.2\text{ A}$	-	0.55	0.7	
Diode Characteristics						
V_{SD}^a	Diode Forward Voltage	$I_{SD} = 0.5\text{ A}, V_{GS} = 0\text{ V}$	-	-	1.3	V
t_{rr}	Reverse Recovery Time	$I_{SD} = 0.5\text{ A}, dI_{SD}/dt = 100\text{ A}/\mu\text{s}$	-	40	-	ns
Q_{rr}	Reverse Recovery Charge		-	39	-	nC
Dynamic Characteristics^b						
C_{iss}	Input Capacitance	$V_{GS} = 0\text{ V}, V_{DS} = 10\text{ V}$ Frequency = 1 MHz	-	30	-	pF
C_{oss}	Output Capacitance		-	3	-	
C_{rss}	Reverse Transfer Capacitance		-	1	-	
$t_d(on)$	Turn-on Delay Time	$V_{DS} = 30\text{ V}, V_{GEN} = 10\text{ V},$ $R_G = 25\text{ }\Omega, R_L = 60\text{ }\Omega,$ $I_{DS} = 0.95\text{ A}$	-	3.6	-	ns
t_r	Turn-on Rise Time		-	3.3	-	
$t_d(off)$	Turn-off Delay Time		-	20	-	
t_f	Turn-off Fall Time		-	11	-	
Q_g	Total Gate Charge	$V_{GS} = 4.5\text{ V}, V_{DS} = 10\text{ V},$ $I_{DS} = 0.95\text{ A}$	-	0.6	-	pC
Q_{gs}	Gate-Source Charge		-	0.26	-	
Q_{gd}	Gate-Drain Charge		-	0.17	-	

Notes :

a : Pulse test ; pulse width $\leq 300\text{ }\mu\text{s}$, duty cycle $\leq 2\%$

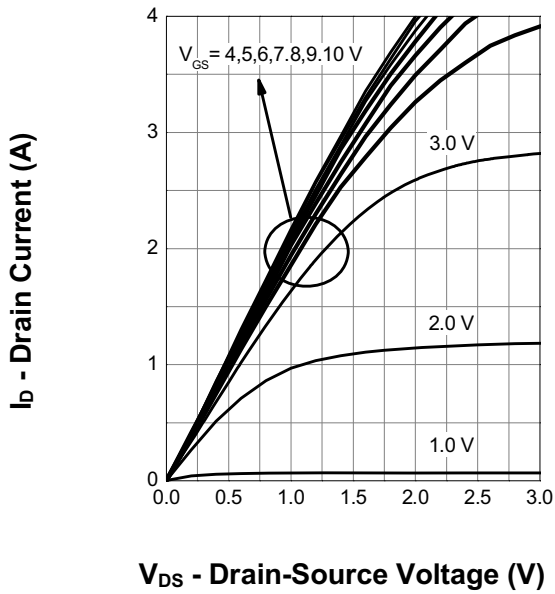
b : Guaranteed by design, not subject to production testing

RATING AND CHARACTERISTICS CURVES (RMD1N25ES9)

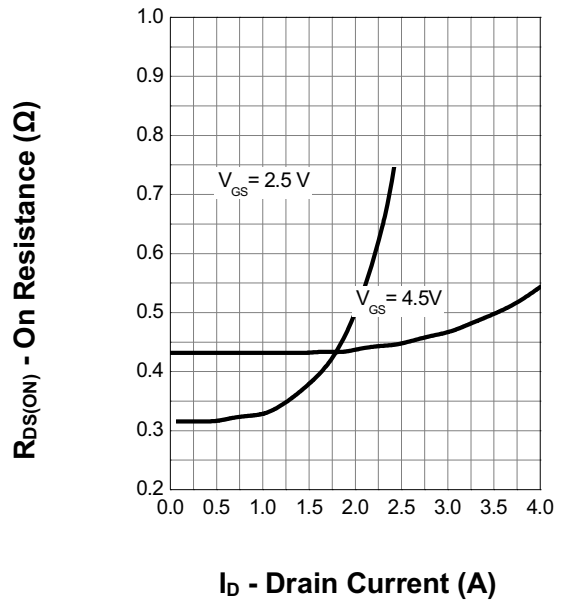


RATING AND CHARACTERISTICS CURVES (RMD1N25ES9)

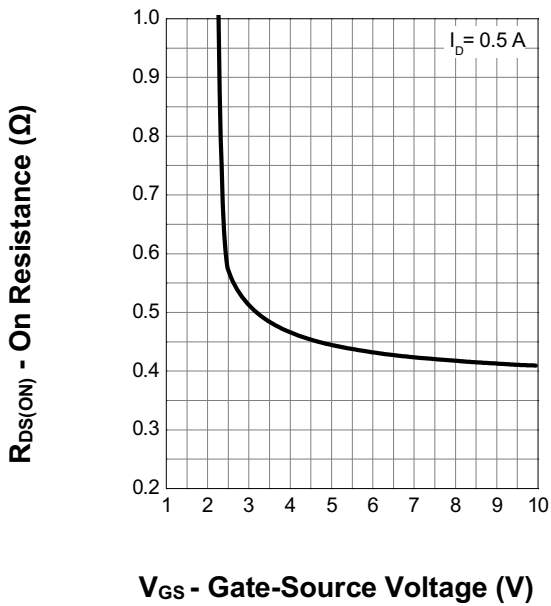
Output Characteristics



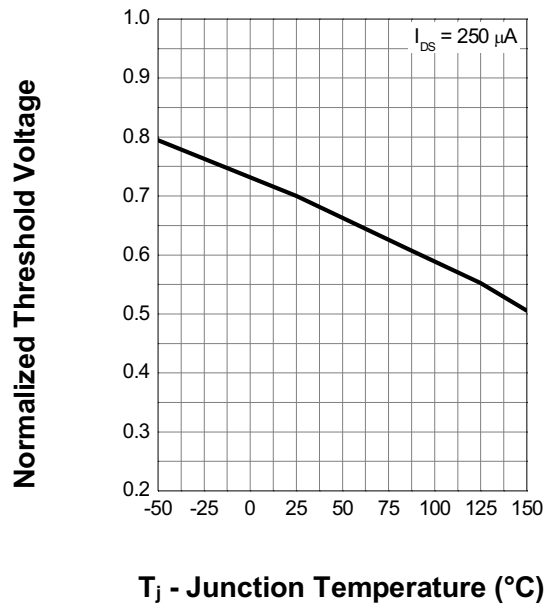
Drain-Source On Resistance



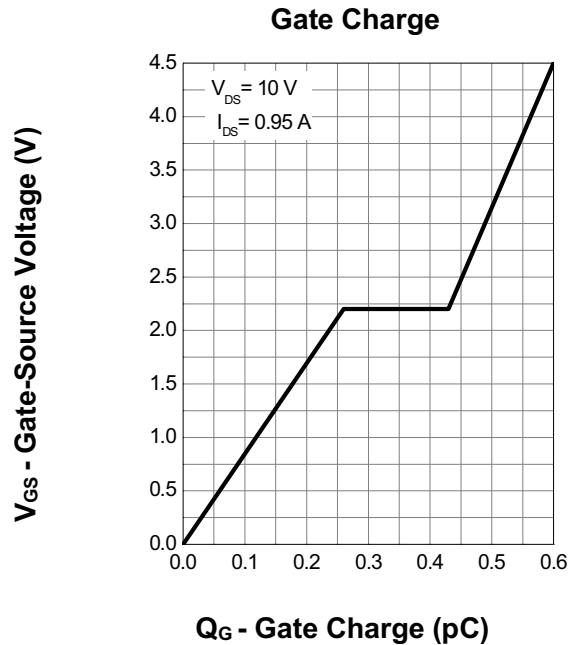
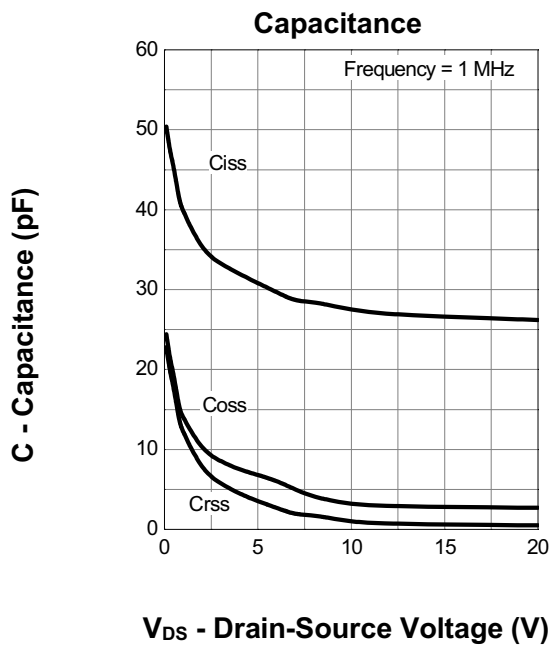
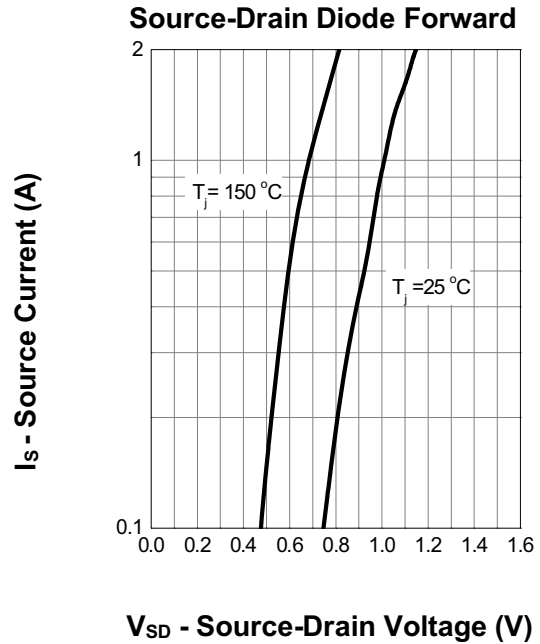
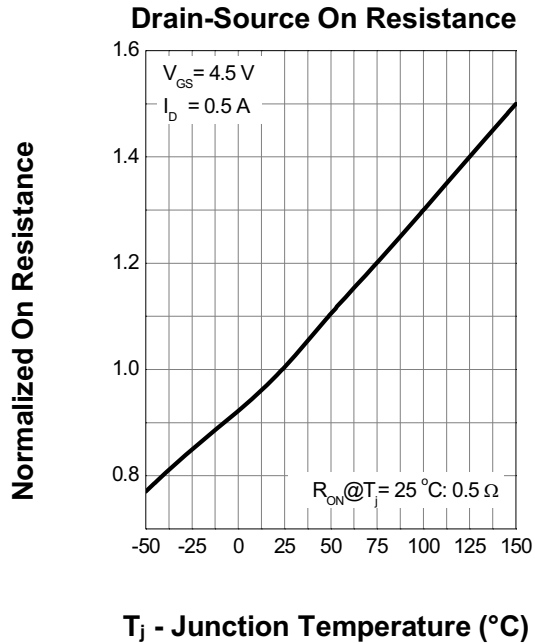
Transfer Characteristics



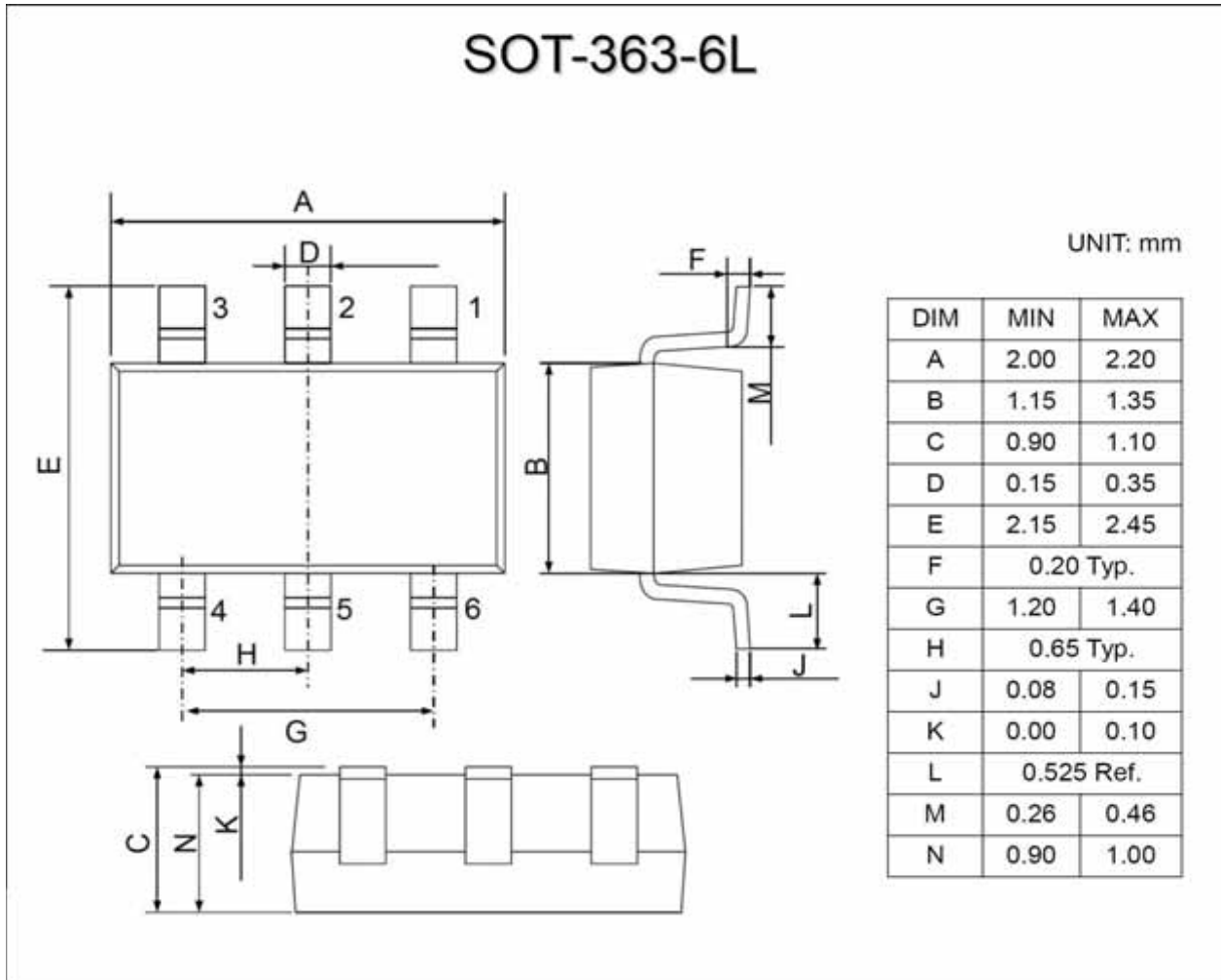
Gate Threshold Voltage



RATING AND CHARACTERISTICS CURVES (RMD1N25ES9)



Package Dimensions



PKG	Reel	Box	pcs/reel	reel/box	pcs/box	box/carton	pcs/carton
SOT363	7"		3000	10	30000	4	120000

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