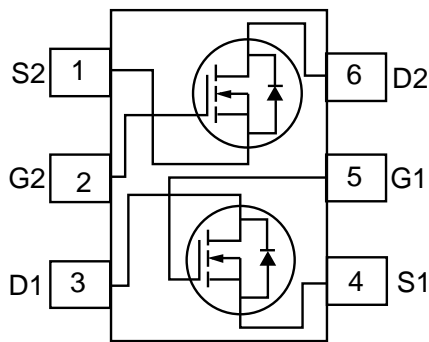


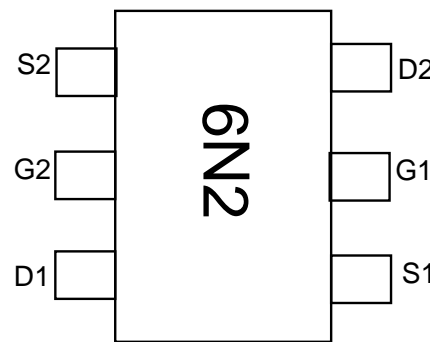
Description

The MOSFET provide the best combination of fast switching, low on-resistance and cost-effectiveness.

MOSFET Product Summary		
V _{DS} (V)	R _{DS(on)} (Ω)	I _D (A)
20	0.29@ V _{GS} =4.5V	0.5



Circuit Diagram



Marking (Top View)

Absolute maximum rating@25°C

Parameter	Symbol	Maximum	Units
Drain-Source Voltage	V _{DS}	20	V
Gate-Source Voltage	V _{GS}	8	V
Continuous Drain Current (T _J =150°C)	I _D	Continuous	0.5
		Pulsed	1.5
Maximum Power Dissipation	P _D	0.3	W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	-55 to 150	°C
Electrostatic Discharge Rating MIL-STD-883D Human Body Model (100pF/1500Ω)	ESD	6.0	kV
Thermal Characteristics			
Parameter	Symbol	Maximum	Units
Thermal Resistance, Junction-to-Ambient	R _{θJA}	415	°C/W

Electrical characteristics per line@25 °C (unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Drain-Source Breakdown Voltage	BV_{DSS}	$I_D = 250\mu A, V_{GS} = 0V$	20		-	V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$	-	-	1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = 8V$	-	-	100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	0.65	0.8	1.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS} = 4.5V, I_D = 0.5A$		0.29	0.34	Ω
		$V_{GS} = 2.7V, I_D = 0.2A$		0.35	0.42	
On-State Drain Current	$I_{D(ON)}$	$V_{GS} = 2.7V, V_{DS} = 5V$	0.5			A
Forward Trans conductance	g_{FS}	$V_{DS} = 5V, I_D = 0.5A$		1.45		S
Total Gate Charge	Q_g	$V_{GS} = 4.5V, V_{DS} = 5V,$ $I_D = 0.5A$		1.64	2.3	nC
Gate-Source Charge	Q_{gs}			0.38		
Gate-Drain Charge	Q_{gd}			0.45		
Input Capacitance	C_{ISS}	$V_{GS} = 0V, V_{DS} = 10V,$ $f = 1MHz$	-	50		pF
Output Capacitance	C_{OSS}		-	28		pF
Reverse Transfer Capacitance	C_{RSS}		-	9		pF
Turn-On Delay Time	$t_{d(on)}$	$V_{DD} = 5V, R_{GEN} = 50\Omega,$ $V_{GS} = 4.5V, I_D = 0.5A$	-	3	6	ns
Turn-Off Delay Time	$t_{d(off)}$		-	17	30	ns
Turn-On Rise Time	t_r		-	8.5	18	ns
Turn-On Fall Time	t_f		-	13	25	ns
Drain-Source Diode Forward Voltage	V_{SD}	$V_{GS} = 0V, I_S = 0.25A$		0.8	1.2	V
Maximum Body-Diode Continuous Current	I_S				0.25	A

Typical Characteristics

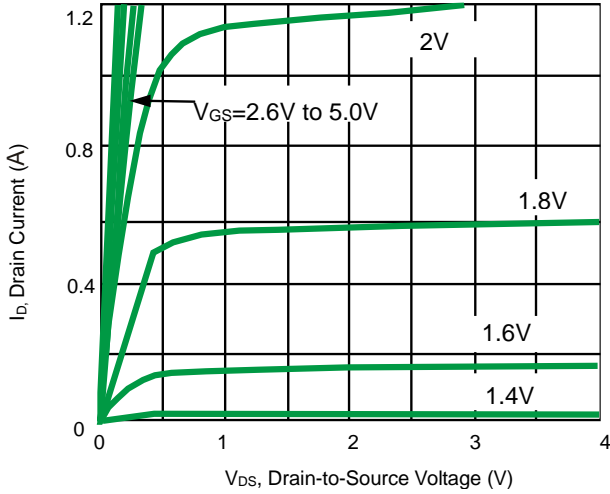


Fig 1. On-Region Characteristics

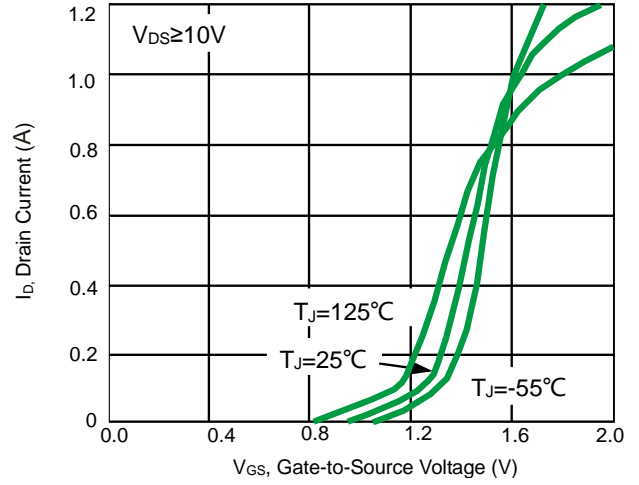


Fig 2. Transfer Characteristics

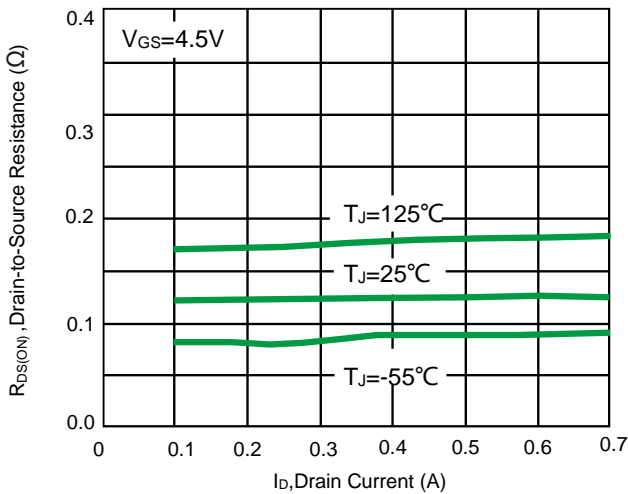


Fig 3. On-Resistance vs. Drain Current and Temperature

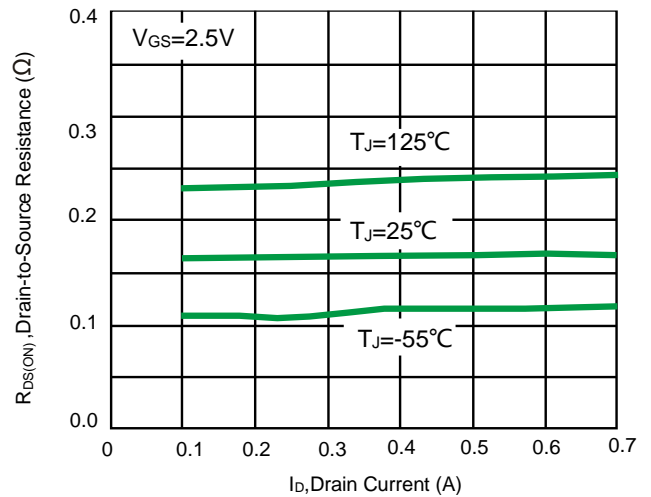


Fig 4. On-Resistance vs. Drain Current and Temperature

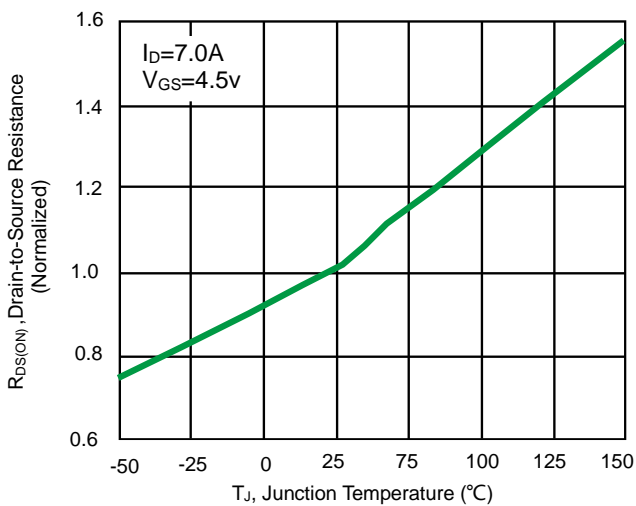


Fig 5. On-Resistance Variation with Temperature

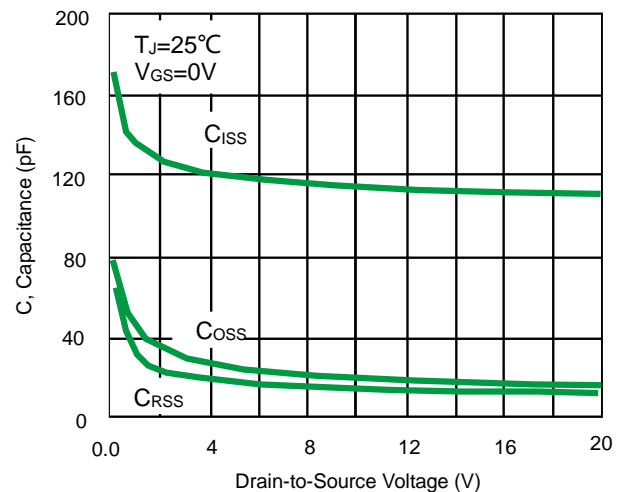


Fig 6. Characteristics Variation

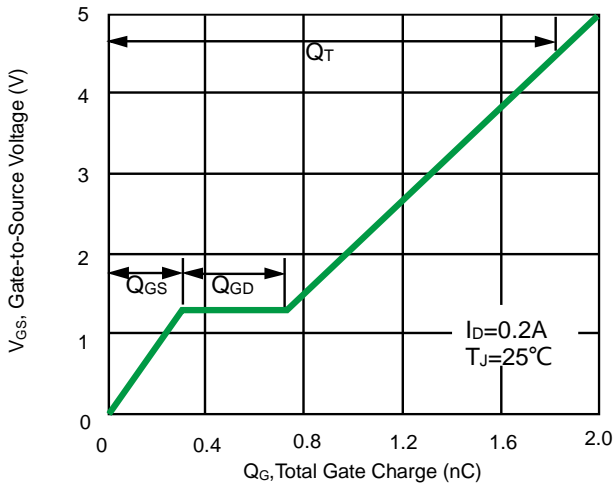


Fig 7. Gate-to-Source Voltage vs. Total Gate Charge

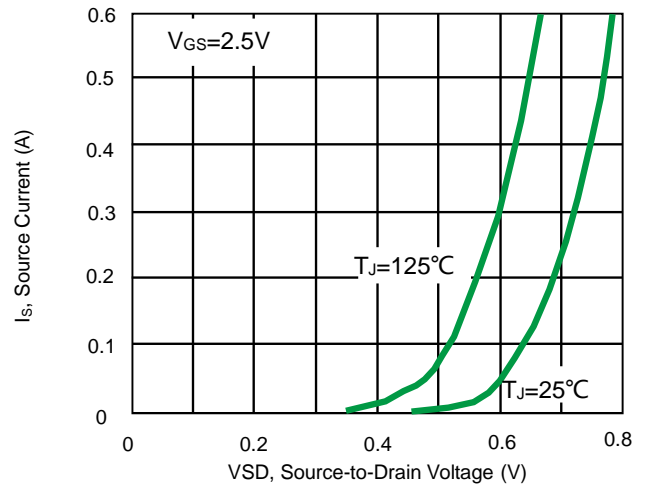


Fig 8. Diode Forward Voltage vs. Current

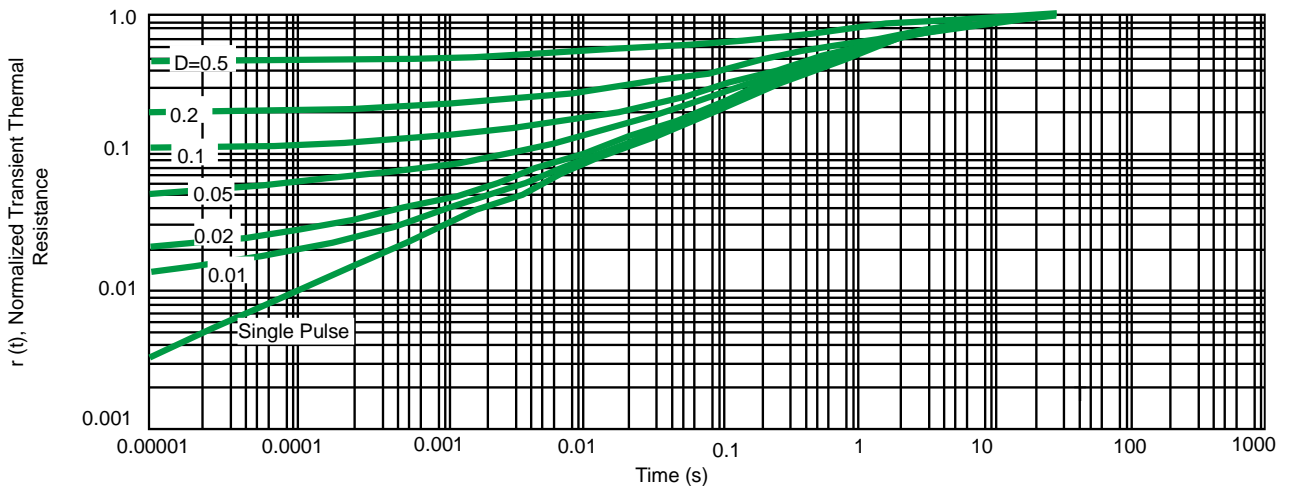
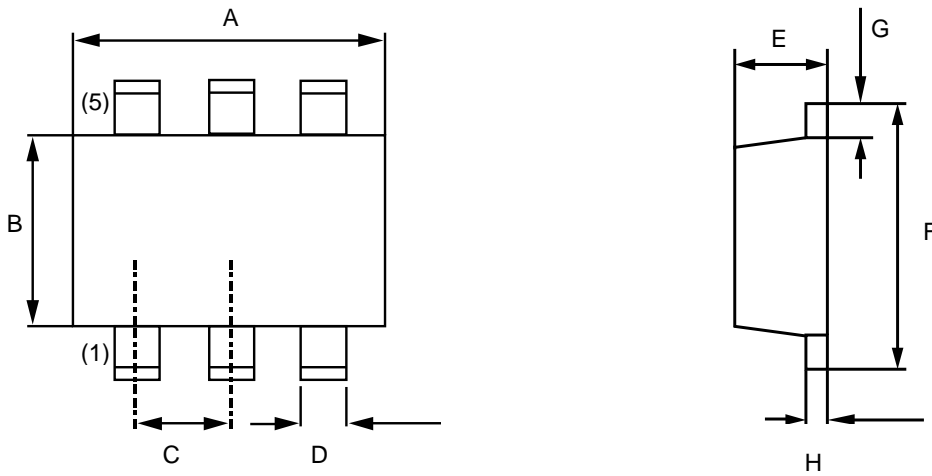
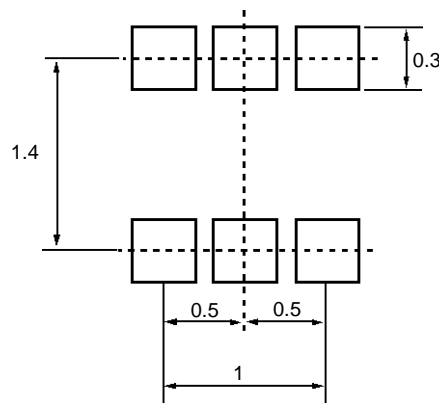


Fig 9. Normalized Thermal Response

Product dimension (SOT-563)



Dim	Millimeters		Inches	
	MIN	MAX	MIN	MAX
A	1.50	1.70	0.059	0.067
B	1.10	1.30	0.043	0.051
C	0.50BSC		0.020BSC	
D	0.17	0.27	0.007	0.011
E	0.50	0.60	0.020	0.024
F	1.50	1.70	0.059	0.067
G	0.10	0.30	0.004	0.012
H	0.08	0.16	0.003	0.006



Ordering information

Device	Package	Shipping
PDNM6ET20V05	SOT-563 (Pb-Free)	3000 / Tape & Reel