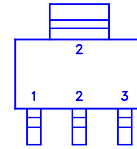
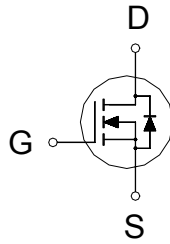


PRODUCT SUMMARY

$V_{(BR)DSS}$	$R_{DS(ON)}$	I_D
25	120mΩ	6A



1. GATE
2. DRAIN
3. SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_C = 25\text{ }^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS		SYMBOL	LIMITS	UNITS
Gate-Source Voltage		V_{GS}	± 20	V
Continuous Drain Current	$T_C = 25\text{ }^\circ\text{C}$	I_D	6	A
	$T_C = 100\text{ }^\circ\text{C}$		3.6	
Pulsed Drain Current ¹		I_{DM}	22	
Avalanche Energy	$L = 0.1\text{mH}$	E_{AS}	60	mJ
Repetitive Avalanche Energy ²	$L = 0.05\text{mH}$	E_{AR}	3	
Power Dissipation	$T_C = 25\text{ }^\circ\text{C}$	P_D	3	W
	$T_C = 100\text{ }^\circ\text{C}$		1.5	
Operating Junction & Storage Temperature Range		T_j, T_{stg}	-55 to 150	$^\circ\text{C}$
Lead Temperature (¹ / ₁₆ " from case for 10 sec.)		T_L	275	

THERMAL RESISTANCE RATINGS

THERMAL RESISTANCE	SYMBOL	TYPICAL	MAXIMUM	UNITS
Junction-to-Case	$R_{\theta JC}$		12	$^\circ\text{C} / \text{W}$
Junction-to-Ambient	$R_{\theta JA}$		42	

¹Pulse width limited by maximum junction temperature.

²Duty cycle $\leq 1\%$

ELECTRICAL CHARACTERISTICS ($T_C = 25\text{ }^\circ\text{C}$, Unless Otherwise Noted)

PARAMETER	SYMBOL	TEST CONDITIONS	LIMITS			UNIT
			MIN	TYP	MAX	
STATIC						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$	25			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	0.8	1.2	2.5	
Gate-Body Leakage	I_{GSS}	$V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$			± 250	nA
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20\text{V}, V_{GS} = 0\text{V}$			25	μA
		$V_{DS} = 20\text{V}, V_{GS} = 0\text{V}, T_J = 125\text{ }^\circ\text{C}$			250	
On-State Drain Current ¹	$I_{D(ON)}$	$V_{DS} = 10\text{V}, V_{GS} = 10\text{V}$	6			A

Drain-Source On-State Resistance ¹	$R_{DS(ON)}$	$V_{GS} = 5V, I_D = 6A$	150	180	mΩ
		$V_{GS} = 10V, I_D = 6A$	120	160	
Forward Transconductance ¹	g_{fs}	$V_{DS} = 15V, I_D = 6A$	16		S
DYNAMIC					
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 15V, f = 1MHz$	450		pF
Output Capacitance	C_{oss}		200		
Reverse Transfer Capacitance	C_{rss}		60		
Total Gate Charge ²	Q_g	$V_{DS} = 0.5V_{(BR)DSS}, V_{GS} = 10V,$ $I_D = 3A$	15		nC
Gate-Source Charge ²	Q_{gs}		2.0		
Gate-Drain Charge ²	Q_{gd}		7.0		
Turn-On Delay Time ²	$t_{d(on)}$	$V_{DS} = 15V, R_L = 1\Omega$ $I_D \cong 10A, V_{GS} = 10V, R_{GS} = 2.5\Omega$	6.0		nS
Rise Time ²	t_r		6.0		
Turn-Off Delay Time ²	$t_{d(off)}$		20		
Fall Time ²	t_f		5.0		
SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ($T_c = 25^\circ C$)					
Continuous Current	I_S			6	A
Pulsed Current ³	I_{SM}			35	
Forward Voltage ¹	V_{SD}	$I_F = I_S, V_{GS} = 0V$		1.5	V
Reverse Recovery Time	t_{rr}	$I_F = I_S, di_F/dt = 100A / \mu S$	30		nS
Peak Reverse Recovery Current	$I_{RM(REC)}$		15		A
Reverse Recovery Charge	Q_{rr}		0.043		μC

¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

²Independent of operating temperature.

³Pulse width limited by maximum junction temperature.

REMARK: THE PRODUCT MARKED WITH “P3055LL”, DATE CODE or LOT #

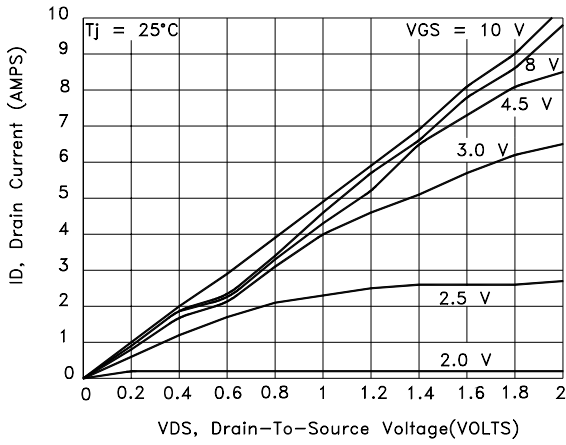


Fig.1 On-Resistance Variation with Temperature

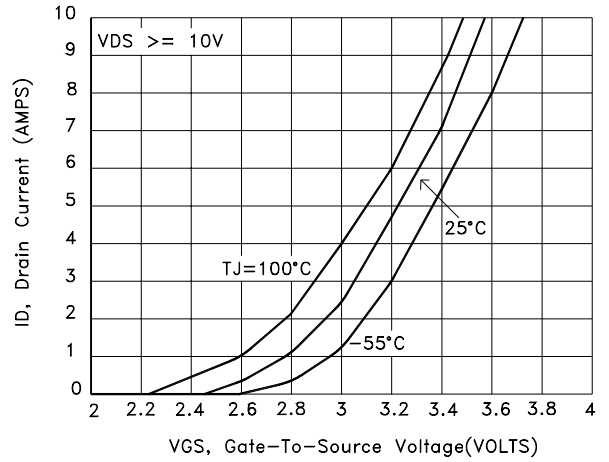


Fig.2 Transfer Characteristics

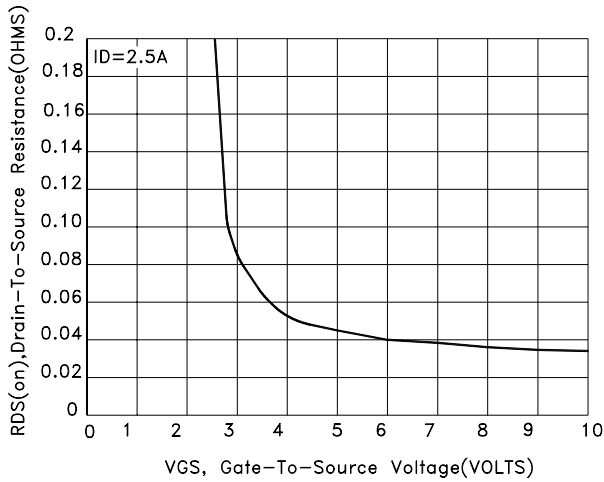


Fig.3 On-Resistance versus Gate-To-Source Voltage

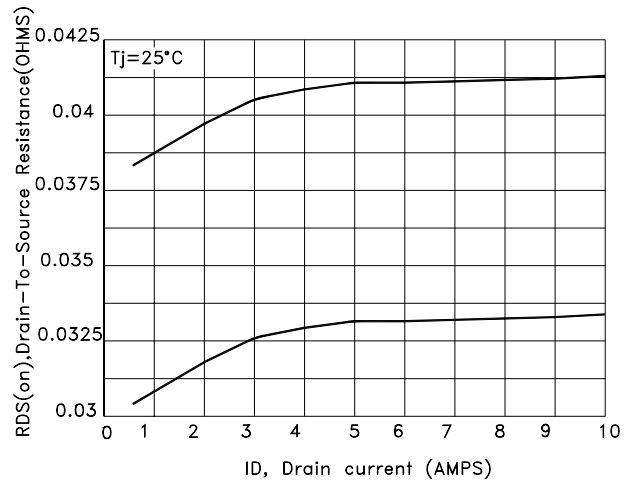


Fig.4 On-Resistance versus Drain Current and Gate Voltage

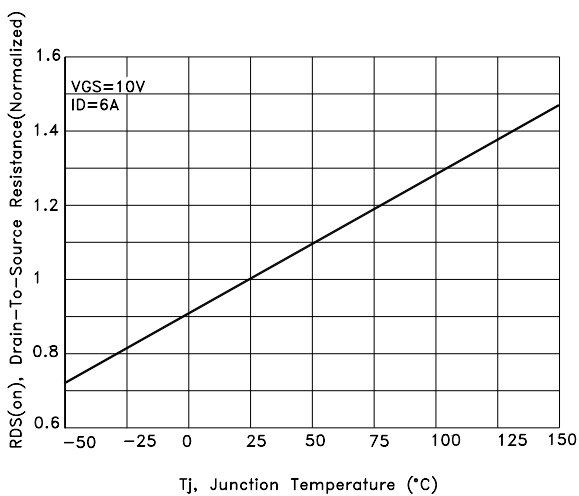


Fig.5 On-Resistance Variation with Temperature

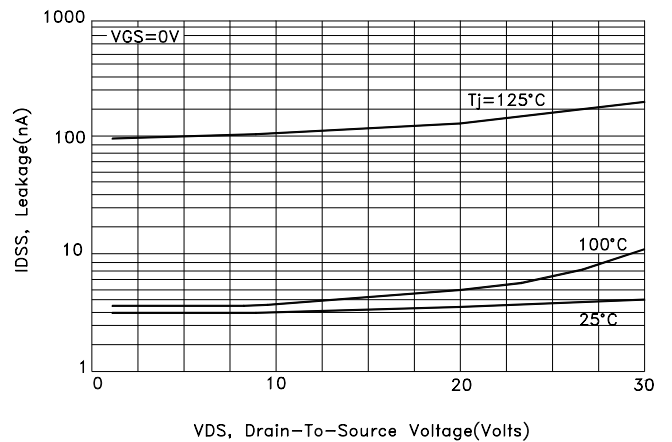


Fig.6 Drain-To-Source Leakage Current versus Voltage

SOT-223 MECHANICAL DATA

Dimension	mm			Dimension	mm		
	Min.	Typ.	Max.		Min.	Typ.	Max.
A	0.67	0.7	0.73	H	3.3	3.5	3.7
B	6.7	7	7.3	I	0.63	0.65	0.67
C	2.9	3	3.1	J		0.32	0.4
D	2.27	2.3	2.33	K	0°		10°
E	4.57	4.6	4.63	L	0.03		0.1
F	1.5	1.6	1.7	M			
G	6.3	6.5	6.7	N			

