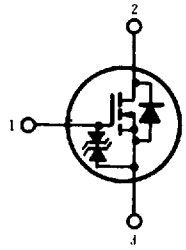
2SK554,2SK555

SILICON N-CHANNEL MOS FET

HIGH SPEED POWER SWITCHING

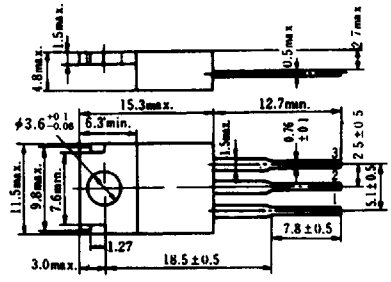
■ FEATURES

- Low On-Resistance.
- High Speed Switching.
- Low Drive Current.
- No Secondary Breakdown.
- Suitable for Switching Regulator, DC-DC Converter, Motor Controls, and Ultrasonic Power Oscillators.



1. Gate
2. Drain (Flange)
3. Source

(Dimensions in mm)



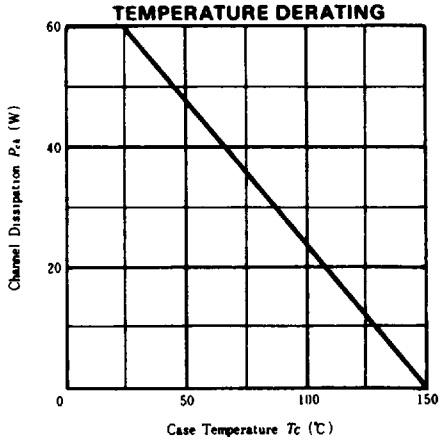
(JEDEC TO-220AB)

■ ABSOLUTE MAXIMUM RATINGS (T_a=25 °C)

Item	Symbol	2SK554	2SK555	Unit
Drain-Source Voltage	V_{DSS}	450	500	V
Gate-Source Voltage	V_{GSS}	±20		V
Drain Current	I_D	7		A
Drain Peak Current	$I_{D(pulse)}$*	28		A
Body-Drain Diode Reverse Drain Current	I_{DR}	7		A
Channel Dissipation	P_{ch}*	60		W
Channel Temperature	T_{ch}	150		°C
Storage Temperature	T_{stg}	−55 ~ +150		°C

*PW≤10μs, duty cycle≤1%
**Value at T_C=25 °C

POWER VS. TEMPERATURE DERATING

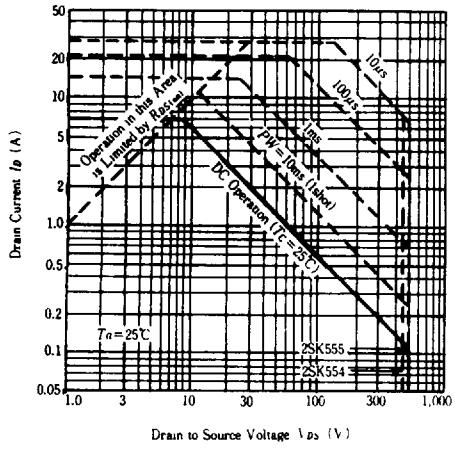


■ ELECTRICAL CHARACTERISTICS (T_a=25 °C)

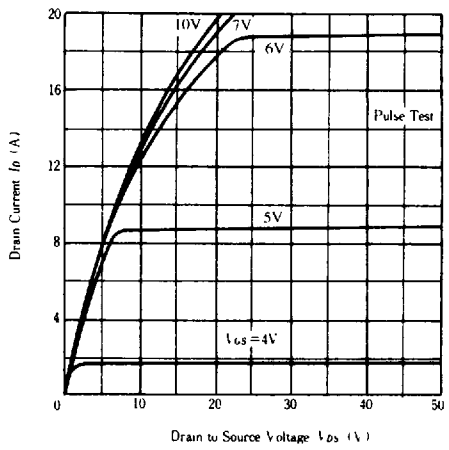
Item		Symbol	Test Condition	min.	typ.	max.	Unit
Drain-Source Breakdown Voltage	2SK554	$V_{(BR)DSS}$	I_D=10mA, V_{GS}=0	450	—	—	V
	2SK555			500	—	—	
Gate-Source Breakdown Voltage		$V_{(BR)GSS}$	I_G=±100μA, V_{DS}=0	±20	—	—	V
Gate-Source Leak Current		I_{GSS}	V_{GS}=±16V, V_{DS}=0	—	—	±10	μA
Zero Gate Voltage Drain Current	2SK554	I_{DSS}	V_{DS}=360V, V_{GS}=0	—	—	250	μA
	2SK555		V_{DS}=400V, V_{GS}=0				
Gate-Source Cutoff Voltage		$V_{GS(off)}$	I_D=1mA, V_{DS}=10V	2.0	—	4.0	V
Static Drain-Source On State Resistance	2SK554	$R_{DS(on)}$	I_D=4A, V_{GS}=10V*	—	0.6	0.85	Ω
	2SK555			—	0.7	1.0	
Forward Transfer Admittance		$\|y_{fs}\|$	I_D=4A, V_{DS}=10V*	4.0	6.5	—	S
Input Capacitance		C_{iss}	V_{DS}=10V, V_{GS}=0, f=1MHz	—	1300	—	pF
Output Capacitance		C_{oss}		—	470	—	pF
Reverse Transfer Capacitance		C_{rss}		—	65	—	pF
Turn-on Delay Time		$t_{d(on)}$	I_D=4A, V_{GS}=10V, R_L=7.5Ω	—	15	—	ns
Rise Time		t_r		—	50	—	ns
Turn-off Delay Time		$t_{d(off)}$		—	100	—	ns
Fall Time		t_f		—	55	—	ns
Body-Drain Diode Forward Voltage		V_{DF}	I_F=7A, V_{GS}=0	—	1.0	—	V
Body-Drain Diode Reverse Recovery Time		t_{rr}	I_F=7A, V_{GS}=0, di_F/dt=100A/μs	—	400	—	ns

*Pulse Test

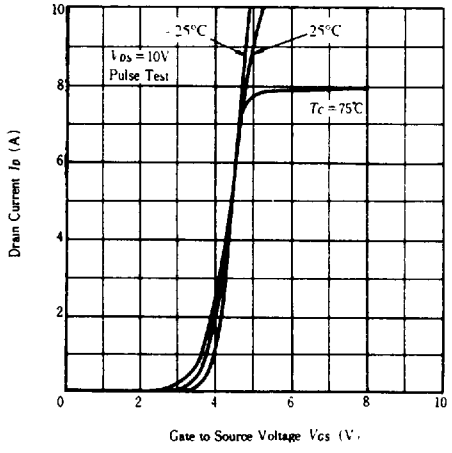
MAXIMUM SAFE OPERATION AREA



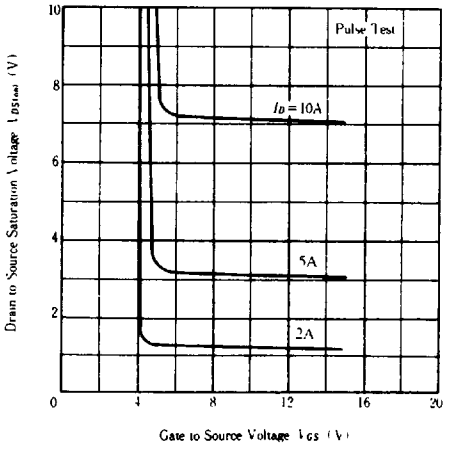
TYPICAL OUTPUT CHARACTERISTICS



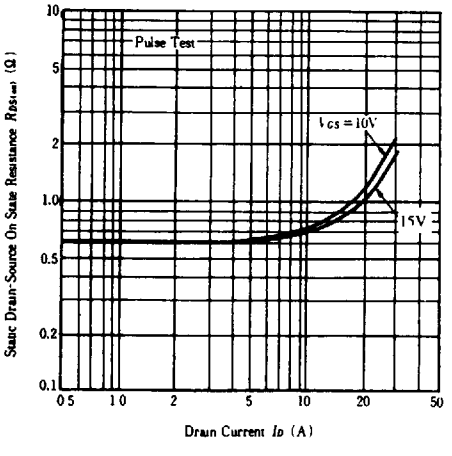
TYPICAL TRANSFER CHARACTERISTICS



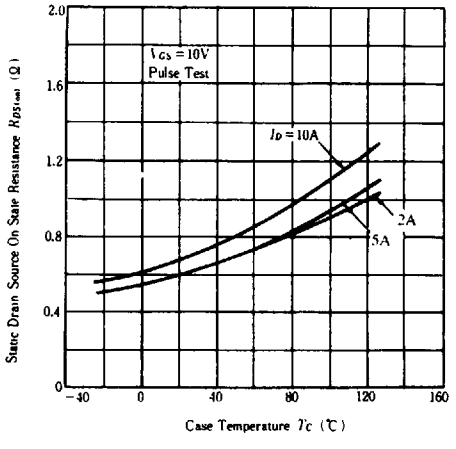
DRAIN-SOURCE SATURATION VOLTAGE VS. GATE-SOURCE VOLTAGE



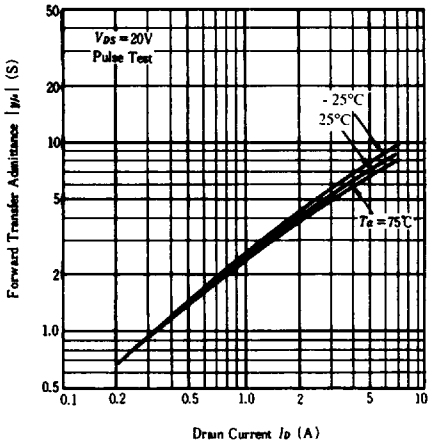
STATIC DRAIN-SOURCE ON STATE RESISTANCE VS. DRAIN CURRENT



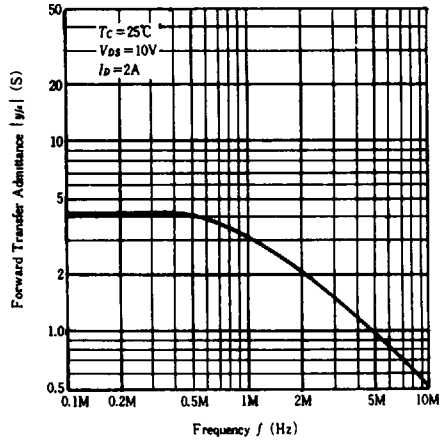
STATIC DRAIN-SOURCE ON STATE RESISTANCE VS. TEMPERATURE



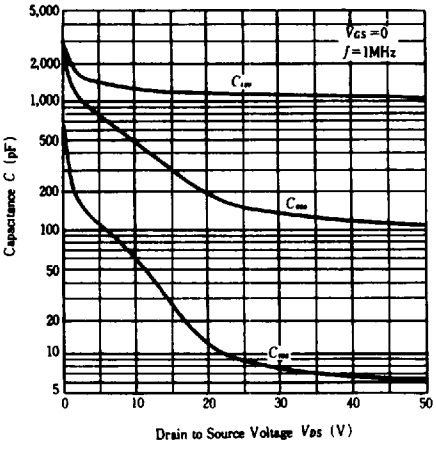
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT



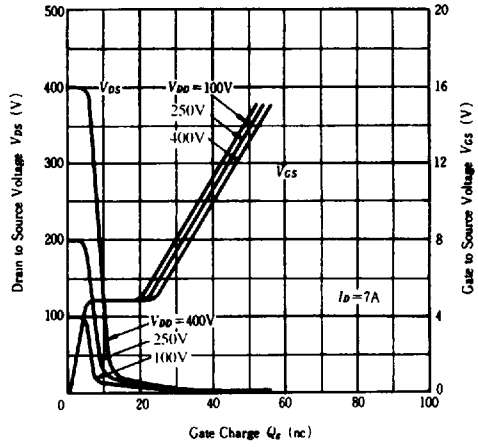
FORWARD TRANSFER ADMITTANCE VS. FREQUENCY



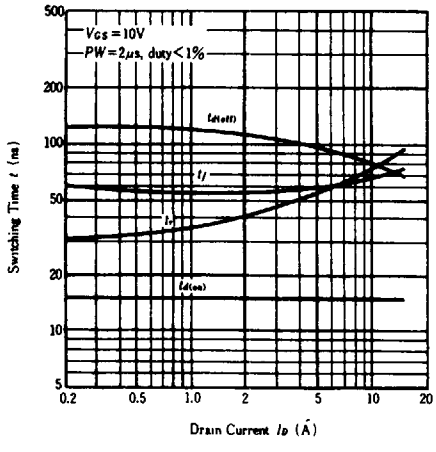
TYPICAL CAPACITANCE VS. DRAIN-SOURCE VOLTAGE



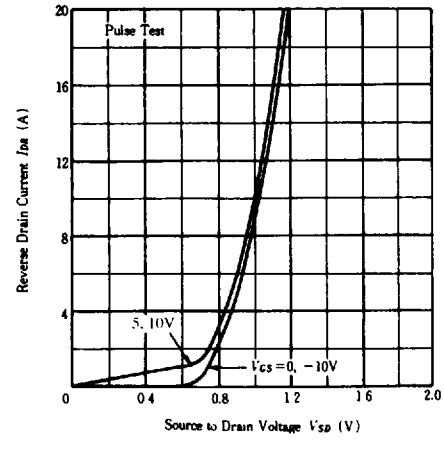
DYNAMIC INPUT CHARACTERISTICS



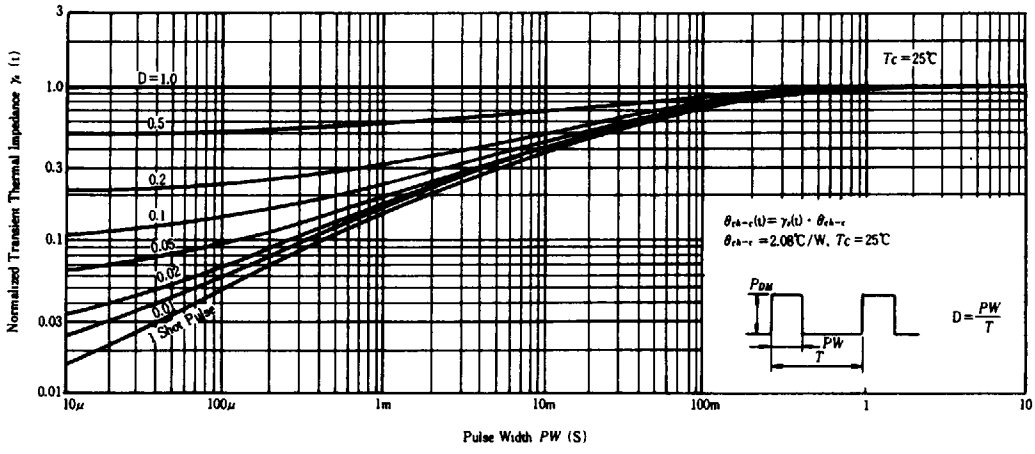
SWITCHING CHARACTERISTICS



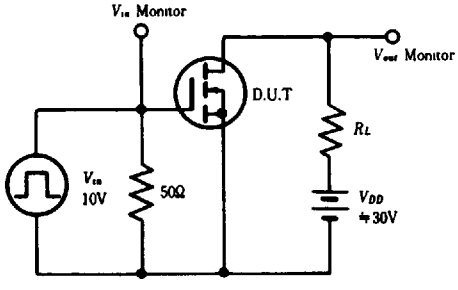
REVERSE DRAIN CURRENT VS. SOURCE - DRAIN VOLTAGE



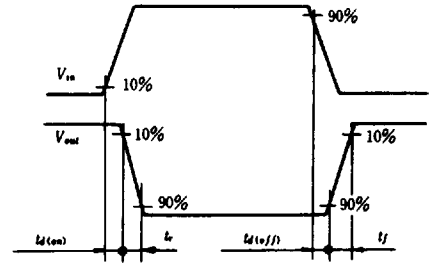
NORMALIZED TRANSIENT THERMAL IMPEDANCE VS. PULSE WIDTH



SWITCHING TIME TEST CIRCUIT



WAVEFORMS



littlediode
COMPONENTS FOR ALL

Littlediode supplies new, hard to find or obsolete electronic components and semiconductors all over the world.

With over two million different components listed you are sure to find the part you need.

Feel free to visit us today at our online store:

LittleDiode.com

Looking forward to providing you with the best possible service.